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THE BASIS OF HOPE IN RUBBER PLANTING.

A QUESTION asked by many persons, when the subject of rubber planting is first brought to their attention, is whether any rubber plantations have yet been developed profitably. If told that no large rubber plantations on a commercial basis have yet been in existence long enough for the trees to have become mature, this statement seems to afford to some minds an ample excuse for distrust of the whole business. If no large plantation of rubber is yet old enough to yield liberally, how does anyone know that rubber can be produced under cultivation? The question deserves consideration, and it may be worth while to point out some of the reasons which have encouraged the investment of a large amount of capital in rubber planting.

If an illustration from an outside field may be permitted, we may mention that the offices of this Journal overlook the first of the great suspension bridges erected over the East river, in New York city, long known as the "Brooklyn bridge." When this structure was first planned, back in 1867, no suspension bridge on such a stupendous scale had ever been built. None had even been planned. It was a great risk to put up in the air a span a third of a mile in length, weighing of itself thousands of tons, and intended to support a vast and incessant traffic. Many people said it couldn't be done; they kept on saying it for sixteen years. So long as the bridge was building people were writing to the newspapers that such a bridge was impossible—because nothing of the kind had been done before. At last the bridge was completed, and for twenty years it has been a constant thoroughfare for more traffic than anybody ever dreamed would exist.

But the bridge was no mere experiment. The engineers who drew the plans and calculated the quantity of materials needed to give certain results simply applied known and tested principles of construction; the new bridge was merely bigger than any that had been built before. Now a second bridge, of still longer span, stretches over the East river, and it causes no wonder.

The application of this to the rubber planting proposition may not be so remote as might at first seem. It has been abundantly proved that a rubber tree seed planted carefully by hand will grow into a tree not differing from the product of a seed dropped by nature and finding a chance place to germinate. It has been proved that the rubber product of such planted trees differs in no way from that of a rubber tree in the forest. Small plantations of rubber, of various species, in different countries, have produced rubber under conditions which point to a lower cost of production than in the richest forest areas exploited for this material along the Amazon, or anywhere else. Furthermore, the product of such cultivated trees, being cleaner and otherwise better prepared, has brought better prices in the markets.

It should not seem an unreasonable proposition, therefore, that if a few planted rubber trees grow well, a large number should grow equally well under like circumstances, or that if hundreds of trees on a given estate

yield at a certain rate, thousands of trees should yield proportionately more. The laboratory test of the tensile strength of steel suffices for estimating the dimensions necessary for a gigantic bridge, and what has been done with a handful of rubber trees is possible to be multiplied with a great number, particularly since the experiments with small numbers of trees have been in progress for more than thirty years, in many localities, and all point to practically the same conclusions.

It might be added that when a new invention in rubber is made, the owner of it does not wait to make and sell millions of specimens before determining whether the article has merit. Generally, if one or two give good results, it is assumed that all of an unlimited number would do equally as well, and the cost of manufacture is figured out in advance, instead of waiting until the goods are produced in great quantities, and the bills for material and labor are in hand. The leading planters of rubber have proceeded upon precisely similar lines in setting out millions of trees, in the hope of duplicating with so many the results obtained from a small number here and there in the past.

ON LOOKING FOR NEW RUBBERS.

THERE are perhaps 300 commercial grades or brands of crude rubber known to the trade. While it is true that many of these trade names are purely geographical designations, several of which are applied to rubber of identically the same class and quality, still the number of really different kinds of rubber marketed is large. Rubber is derived from many parts of the world, and from a large variety of trees, vines, shrubs, and even from the bark of roots, these different plants yielding widely differing products. Not only this, but the *latex* of the same tree, treated by varying methods, will yield rubbers not of the same quality.

While some of these grades are readily interchangeable in the factory, so that in the absence of a particular grade, its place in a given compound may readily be filled by another, there are very many other cases where in the production of a certain article of manufacture, if its quality is to remain uniform, and its cost the same, a particular kind of rubber is essential. These considerations apply to the lower grades no less than to the best sorts—to "Accra flake" as well as to "fine old Upriver Pará," which latter grade was quoted in our last issue at exactly three times as much per pound as the former.

Of course these statements are mere truisms to the manufacturer, who does not share the popular idea that all rubber is rubber, and that if one lot brings more money than another, it is due to the condition in which it is marketed. But our object in writing is to point out that perhaps the limit has not been reached in utilizing the lower classes of rubber or rubber-like gums.

The first rubber to be utilized to an important degree was of the Pará class, and so long as this sort was sufficient to fill the demand, and prices remained low as compared with present day figures, little interest was felt in

rubbers of lower grades. There came a time, however, when the industry was forced to adapt itself to the use of pretty much everything in the way of rubber that could be had. Indeed, it was found that for certain purposes Africans, for instance, not only served quite as well as the more expensive Pará, but even better. The combined consumption of other rubbers has now come to exceed that of Pará rubber proper; otherwise, the price of Pará must by this time have gone up to figures entirely prohibitive so far as many uses are concerned.

Now it must be understood that, practically speaking, the limit of production of native rubbers has been reached. At any rate, if the demand should continue to grow, no such increase of production can be looked for as will permit a marked decline in cost. It is important, therefore, to consider whether the utmost has been done in the utilization of the very cheap gums, the most important example of which, thus far, has been Pontianak. The use of this particular material is already very large, its extremely low price permitting of the making of certain compounds at a cost far below what would be possible without it, besides which the gum has distinctive merit.

Now if some of the other pseudo rubbers—and Pontianak gum is by no means alone in this class—should be exploited as carefully as this has been, it might be that they would also develop distinctive characteristics, just as higher grades of rubber differ one from another, and that a new compounding material would be found that would relieve the pressing demand for rubber and tend to lessen its cost. This is a field that should appeal to the rubber chemist, and in which he should have the earnest support of the manufacturer.

LITERATURE OF INDIA-RUBBER.

THE GUTTA-PERCHA AND RUBBER OF THE PHILIPPINE ISLANDS. By Penoyer L. Sherman, Jr., Ph.D. [Department of Interior, Bureau of Government Laboratories, Chemical Laboratory, Bulletin No. 7—1903.] Manila: Bureau of Public Printing, 1903. [8vo. Pp. 43 + maps and plates.]

A MONOGRAPH on the distribution of Gutta-percha species and the methods of extracting and marketing the product, together with a summary of the work done in connection with Gutta-percha in the government laboratories. A new method of refining gutta is described, which is expected to increase its marketable value.

THE first rubber journal in France is *Le Caoutchouc et la Gutta-Percha*, a monthly organ of the Caoutchouc and Gutta-percha and allied industries, including cable making, asbestos, vulcanized fiber, celluloid, etc., the initial number of which appeared March 15. The journal is devoted largely to technical articles, and to reports on sources of rubber in America and Africa, with full market reports. The director is M. A. D. Cillard fils and the editor-in-chief M. Pierre Breuil, besides which there is announced a list of principal collaborators, including some of the best known writers in France on topics connected with the scope of the journal, including MM. René Bobet and G. Lamy-Torrilhon. The annual subscription is 20 francs in France and 26 francs abroad. The offices are at 49, rue des Vinaigriers, X, Paris.

DE PARACAOUTCHOUBOOM IN AZIË (The Pará rubber tree in Asia). By A. H. Berkhout. [Review of the report by O. J. A. Collet noticed in THE INDIA RUBBER WORLD, December 1, 1903—page 80]. = *De Indische Mercur*, Amsterdam. XXVI-51 (December 22, 1903). Pp. 863-864.

MEETING OF THE MECHANICAL GOODS TRADE.

ON the evening of April 21 there was a notable and representative gathering of the officers of the various companies that manufacture mechanical rubber goods, at the Savoy Hotel, New York. The object of the gathering was largely social, which was inaugurated by a half hour spent in the spacious reception rooms, after which Mr. John J. Voorhees called for order and requested those present to nominate a presiding officer for the evening, a secretary, and treasurer. The following were unanimously elected: Amadée Spadone, chairman; William Hillman, secretary; Arthur F. Townsend, treasurer. Those present then adjourned to the banquet hall, which is by far the finest in New York, and sat down to a dinner that was perfect in all of its appointments, which included music, flowers, and a pleasing menu.

After the coffee Mr. Amadée Spadone arose, and, in a few well chosen words, introduced Mr. A. M. Paul, general manager of the Boston Woven Hose and Rubber Co., who had been invited to speak on "Some Abuses of the Trade," and had prepared a most interesting and practical essay, which was listened to with appreciation.

The presiding officer then introduced Mr. C. Edward Murray, president of the Crescent Belting and Packing Co., who explained that he was acting as an impromptu substitute for Mr. Welling G. Sickel, of the United and Globe Rubber Manufacturing Cos. Mr. Murray spoke earnestly and to the point, favoring some concerted action on the part of the manufacturers to remedy the abuses spoken of by Mr. Paul.

The Rev. Dr. Charles Herr was the next speaker, who in a very happy manner contrasted the old time cleric, viewing others of the cloth with bitter distrust, with the ministers of the present day who met, fraternized, and worked together. He saw no reason why members of the rubber trade should not in the same way adapt themselves to the modern spirit of coöperation.

The toastmaster then called upon several of the representative rubber men for an expression of their views including Mr.

B. G. Work, vice president of The B. F. Goodrich Co., Mr. William H. Acken, president, and Mr. John P. Ryder, vice president of the New York Rubber Co., Mr. John J. Voorhees, president of the Voorhees Rubber Manufacturing Co., Mr. Benjamin F. Elson, of the Boston Belting Co., Mr. James Boyd, of the Chicago Electric Hose Co., and Mr. A. D. Thornton, of the Canadian Rubber Co.

After this informal speech making, which was full of interest and often greeted with applause, the Editor of THE INDIA RUBBER WORLD was introduced. Mr. Pearson briefly reviewed the ground covered by the previous speakers and moved that a committee be named by the chair, to arrange for a permanent organization, to draft a constitution, and nominate officers. This motion was seconded by Mr. A. M. Paul and carried unanimously, the chair naming Messrs. John J. Voorhees, William Hillman, and Arthur F. Townsend to serve as the committee.

Letters and telegrams expressing regret at not being able to be present were received from Messrs. Henry C. Morse, H. D. Warren, Welling G. Sickel, W. T. Cole, E. L. Perry, and James Bennett Forsyth. The latter wired:

Should be glad to support any thoroughly honest, earnest, and well maintained efforts to improve conditions affecting the mechanical rubber goods business. Hoping banquet will be a success and that everybody will go home happy. JAMES BENNETT FORSYTH.

Those present were:

Boston Belting Co.=Benjamin F. Elson.
Boston Woven Hose and Rubber Co.=A. M. Paul, W. F. Foster.
Canadian Rubber Co. of Montreal.=L. E. A. Cholette, A. D. Thornton.
H. O. Canfield.=A. H. Canfield.
Chicago Electric Hose Co.=James Boyd.
Crescent Belting and Packing Co.=C. Edward Murray.
Diamond Rubber Co.=W. B. Miller.
Empire Rubber Manufacturing Co.=H. A. Baker, A. Boyd Cornell.

Eureka Fire Hose Co.=Benjamin L. Stowe, George A. Weis.
The B. F. Goodrich Co.=B. G. Work.
Grieb Rubber Co.=William G. Grieb, C. H. Oakley.
Gutta Percha and Rubber Manufacturing Co.=Amadée Spadone, Alfred A. Spadone.
Hamilton Rubber Manufacturing Co.=William L. Blodgett.
Hartford Rubber Works Co.=Lewis D. Parker, R. P. Parker, William Seward, J. W. Gilson.
Hodgman Rubber Co.=S. Theodore Hodgman.
Home Rubber Co.=Joseph O. Stokes.
THE INDIA RUBBER WORLD.=Henry C. Pearson.
Manhattan Rubber Manufacturing Co.=Arthur F. Townsend, Eliot M. Henderson, Alexander Henderson, F. L. Curtis.
Mercer Rubber Co.=William A. Minott.
National India Rubber Co.=Richard H. Pease.
New York Belting and Packing Co., Limited.=J. H. Cobb, J. W. Macomb, C. H. Place, G. A. Smith.
New York Rubber Co.=William H. Acken, John P. Ryder, Henry F. Hering, Harry Montgomery, George C. Smith.
Peerless Rubber Manufacturing Co.=Charles A. Hunter, G. S. Taylor, James McGuffog, Frank Hardy.
Pennsylvania Rubber Co.=H. W. Du Puy.
Revere Rubber Co.=William Hillman, E. S. Williams.
Trenton Rubber Manufacturing Co.=A. N. Hammerstrom.
United and Globe Rubber Manufacturing Cos.=John S. Broughton.
Voorhees Rubber Manufacturing Co.=John J. Voorhees, J. J. Voorhees, Jr., Frank D. Voorhees, George F. Covell.
Whitehead Brothers Rubber Co.=Alfred Whitehead, William R. Whitehead.



AMADEE SPADONE, TOASTMASTER.

MENU.

Huitres Pointe Bleue
Gumbo de Volaille, à la Créole
Brauneberger Canape de Crabs, à la Martha
Truite de Rivière Sauté, Meunière
Concombres
Agneau du Printemps, Aromatique
Haricots Verts, Maître d'Hotel Pommes de terre, Dauphine
Ris de Veau, Braisé, Financière
Asperges, sauce Chantilly
Cigars Sorbet Château Montrose
Pigeonneau Rôti au Cresson
Salade Panachee
Glacé de Fantaisie
Petits Fours Fruit Café

ANNUAL MEETING OF THE NEW ENGLAND RUBBER CLUB.

ONCE a year the members of the New England Rubber Club get together to transact whatever business their annual meeting may call for, and to have a dinner or some sort of entertainment.

Through the courtesy of the Massachusetts Automobile Club, of Boston, their fine club house was given over to the Rubber Club for the evening of April 18, the date of the fourth annual meeting, and the main hall was crowded to overflowing, the attendance being over two hundred—the largest gathering in the history of the organization.

At 7.45 President Apsley called the meeting to order, and the following reports were read and accepted:

SECRETARY'S REPORT.

MR. PRESIDENT, AND MEMBERS OF THE NEW ENGLAND RUBBER CLUB: The last annual meeting of our Club was held at the Exchange Club, Boston, on the evening of May 15, being an adjourned meeting from the third Monday in April. President L. D. Apsley was in the chair. The reports of the secretary and treasurer were read and accepted, and the following officers elected:

President—L. D. APSLEY.
Vice President—ARTHUR W. STEDMAN.
Secretary—HENRY C. PEARSON.
Treasurer—GEORGE P. WHITMORE.
Assistant Secretary—ELSTON E. WADBROOK.
Directors—Costello C. Converse, Joseph Davol, Allen L. Comstock, A. M. Paul, John H. Flint, George H. Forsyth.

Reviewing briefly the year's record, it is pleasant to be able to report that the Club has grown in numerical strength, the membership reaching now to 179 members, divided as follows: 7 honorary members, 39 associate members, 133 resident members.

During the year past the Club has given three most successful dinners. First, the Mexican-American Fiesta, which followed the annual meeting at the Exchange Club; second, the Midsummer Outing at the Country Club, Brookline; and the third, a notable dinner at Hotel Somerset.

The object of the Club, that of social intercourse between members of the great New England rubber manufacturing corporations, seems to be fully realized, and the enthusiastic spirit with which the association was inaugurated some four years ago, seems in no way diminished.

Respectfully submitted, HENRY C. PEARSON,
 Secretary.

TREASURER'S REPORT.

RECEIPTS.

| | |
|----------------------------------|------------|
| Bank Balance April 20, 1903..... | \$1,324.56 |
| From Members for Initiation..... | \$ 70.00 |
| From Members for Dues..... | 728.15 |
| From Members for Dinners..... | 1,293.29 |
| Total..... | 2,091.44 |
| | \$3,416.00 |

DISBURSEMENTS.

| | |
|---|------------|
| Dinners, etc..... | \$1,891.15 |
| Flowers..... | 88.40 |
| Music and Entertainment..... | 419.29 |
| Prizes and Sporting Goods..... | 30.50 |
| Printing, Postage, etc..... | 282.62 |
| Bank Balance and Cash on Hand April 18, 1904..... | 704.04 |
| Total..... | \$3,416.00 |

GEORGE P. WHITMORE,
 Treasurer.

APPROVED: J. Frank Dunbar, George P. Eustis, Auditors.

On motion of Governor A. O. Bourn the secretary was instructed to cast one ballot for the election of the following officers:

President—L. D. APSLEY.
Vice President—ARTHUR W. STEDMAN.

Treasurer—GEORGE P. WHITMORE.

Secretary—HENRY C. PEARSON.

Assistant Secretary—E. E. WADBROOK.

Directors—Costello C. Converse, Joseph Davol, Allen L. Comstock, A. M. Paul, John H. Flint, George H. Forsyth.

The president then introduced Mr. Henry C. Pearson, who described his recent journey to Ceylon and the Federated Malay States to see the great plantations of Pará rubber that are beginning to attract the attention of the rubber trade.

The story was illustrated by stereopticon pictures, which showed typical views of the cities, peoples, plantations, and wilds that were visited. One hundred and twenty pictures were shown, the lecture ending with a brief glimpse of Japan, which country was visited on the homeward journey.

At the close of the "Smoke Talk" the New England Rubber Club unanimously voted its thanks to the club that had extended its hospitality to them, and then proceeded to enjoy the eatables and drinkables that were served as a further evidence of the care that the Automobile Club takes of its guests.

NEW TRADE PUBLICATIONS.

THE INDIA RUBBER AND GUTTA PERCHA INSULATING CO. (Yonkers, New York) issue an illustrated catalogue of Habirshaw wires and cables, manufactured by them, which is comprehensive and accurate as to the text, and helpfully illustrated with a liberal number of cuts, showing sections of the various types of the Habirshaw cables. There are illustrations also of devices peculiar to this company, including the "bus bars" installed by them at Niagara Falls, and views of the interior of the company's testing room. This is an unusually handsomely got up trade publication, compiled by Mr. Frederick J. Hall, and copyrighted. [8"×10½". 23 pages.]

THE ATLANTIC RUBBER SHOE CO. (Providence, Rhode Island) have issued their initial trade announcement, in the shape of a net price list for 1904 of "The New Process Rubber Footwear", being the machine made rubber shoes. This first list shows cuts of a few of the lines of shoes manufactured by the company, the same being well executed, and indicating that an attractive line of goods is offered. The list includes Hurons, lumberman's overs, Perfections, leather tops (crome kip), wool boot combinations, heavy arctics, Omaha arctics, light jersey arctics, croquet Alaskas, selfacting Alaskas, storm Alaskas, men's selfacting overs, croquet overs, and storm overs. Net prices are given, with an announcement that the same are subject to change without notice. The trade will be interested to note these prices are somewhat higher than for goods offered under the same designations by the old companies. [3½"×6". 12 pages.]

BANNER RUBBER CO. (successors to Monarch Rubber Co., St. Louis) issue their 1904 illustrated catalogue of Boots and Shoes under the title "A New Method of Buying," having reference to new policy of selling direct to the retail trade. Their first quality goods are branded "Sunset" and their second grade "Prairie Rubber Co." Prices are given on a special list. [7"×9". 28 pages.]

ALSO RECEIVED.

NEW YORK BELTING AND PACKING CO., Limited—Interlocking Rubber Tiling. List of places where it has been laid. 12 pages.

The Pure Gum Specialty Co., Barborton, Ohio.—Price List [of Drugs' Sundries; prices blank]. 12 pages.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

SECOND LETTER.

Growth of *Hevea* Trees at Heneratgoda.—Their Yield at Various Ages.—Visit to Peradeniya.—Director Willis and His Work.—Canker Fungus in *Hevea* and its Treatment by Mr. Carruthers. Railways in Ceylon.—Plantation Scenes.—Leeches and Other Insect Pests.

ABULLOCK hackery is a small two wheeled cart, gaudily painted, with oilcloth top, no springs, and a seat on which sits the driver so close to the little hump-backed bullock that he easily twists his tail, or punches his ribs to make him trot, while the passenger, sitting back to the driver, clings as best he may. It is a most jerky mode of progression, as the bullock starts and stops with surprising suddenness; indeed, his whole progress is a series of jerks against which it is difficult to guard. Were it not for the little step behind on which one's feet rest, it would be impossible to hold on for more than five or six minutes. The bullock is a tough little beast, about four feet high at the shoulders, and is supposedly guided by a pair of rope reins that run through its nostrils. He is, however, more influenced by the half bark, half yell, of the driver, and the vigorous tail twisting that he indulges in on occasion.

From the station I rode through a most densely populated native village, with narrow streets and a smell of stale fish that was simply appalling. Here we gathered a lot of flies, but as they ultimately settled on the bullock's hump, no especial annoyance came from their presence. Finally we reached the entrance to the gardens, turned in, and in due time found Mr. Perira, who at once put himself at my disposal. On the way he showed me some Ceará rubber trees which appeared to have

grown well, but as that tree in Ceylon has not proved profitable, it was to me of only transient interest. I did, however, measure one which was twenty years old, which was two feet in diameter three feet from the ground, and was probably 50 feet high. That it contained some *latex* I proved by cutting into it.

A short distance away, on a somewhat lower level, was a grove of *Heveas* 20 years old, 60 to 70 feet high. They were planted about ten feet apart, and had taken full possession of the soil, no weeds or grass growing in the dense shade they cast. The trees looked very healthy, with smooth bark and straight limbs, the branches appearing about 30 feet from the ground. There were about 300 trees in this lot. The trees have been tapped experimentally a few times, but are kept rather as seed bearers than rubber producers. The soil is gravelly, but seems to grow almost anything. The land is but 33 feet above the sea level, and the annual rainfall less than 100 inches.

Not far from here is the oldest planting of *Hevea* at this place. These are trees about 30 years old. They are fine specimens, and with massive trunks three or more feet in diameter. As a rule the trunks are straight single stems, but here several of the larger ones had huge divided trunks. I also had a look at a few specimens of the *Castilloa elastica*, but they did not appear to be doing well. I was also interested to see a good specimen of the *Landolphia florida*, which did not strike me as a vine that it would be at all profitable to cultivate.

It is here at Heneratgoda gardens that the first successful planting of Pará rubber occurred, and what is more important it is due to the eminent scientists in charge of this garden and



[“Herring Bone” Tapping, at 13 years.]



[Tapping with Mallet and Chisel.]

PARA RUBBER TREES (“*HEVEA BRASILIENSIS*”) AT HENERATGODA.



"HEVEA" AT HENERATGODA.

[Large tree in foreground on which tapping experiments were made for several years.]

that at Peradeniya that we have any sort of knowledge of the growth and productiveness of the *Hevea* tree under cultivation. Their work dates back to 1876 under Director Thwaites, when 70,000 seeds, sent from the Amazon to Kew gardens, London, were set out, only 4 per cent. of them germinating. From there about 2000 plants were sent in wardian cases to Ceylon in charge of an experienced man, Mr. W. Chapman, and 90 per cent. reached the gardens in an excellent condition. These were set out in bamboo pots and the next season were transferred from Peradeniya to Heneratgoda and flourished almost from the beginning, but the planters had set their hearts on the Ceará tree and paid but little attention to the reports that Director of the Gardens Dr. Trimen, Dr. Thwaites' successor, made from time to time as to their growth.

In 1883 several of the *Hevea* trees at Heneratgoda flowered and from the ripened seeds 260 plants were raised and distributed to various planters. One year later 1000 plants were raised in the same way and sent out.

In 1886 the Pará plantation at Heneratgoda was thinned out, all of the smaller trees being cut down, after which there was a noticeable improvement in the growth of the remainder. Seeds were sent that year to Jamaica, Madras, Rangoon, Penang, and the botanic gardens at Buitenzorg, Java, while from the crop of 1888 there were sent to the Straits Settlements some 11,500, together with 1000 to the Fiji islands.

Dr. Trimen made annual measurements of a typical tree at Heneratgoda which are as follows, the tree being planted in 1876. The measurements are circumferential and taken as is the custom three feet from the ground :-

| | | | |
|---------|-----------|--------------|--|
| TRIMEN. | 1880... | 1 ft. 4 in. | |
| | 1881..... | 1 " 9 " | |
| | 1882..... | 2 " 13 1/2 " | |
| | 1883..... | 2 " 6 " | |
| | 1884..... | 3 " 0 " | |
| | 1885..... | 3 " 7 " | |
| | 1886..... | 4 " 1 " | |
| | 1887..... | 4 " 5 1/2 " | |
| | 1888..... | 5 " 0 " | |
| | 1889..... | 5 " 5 " | |
| WILLIS. | 1890..... | 5 " 9 1/4 " | |
| | 1891..... | 6 " 1 " | |
| | 1892..... | 6 " 5 " | |
| | 1893..... | 6 " 7 1/2 " | |
| | 1894..... | 6 " 8 " | |

urement was taken at about 5 1/2 feet from the ground. The largest tree was 7 feet 5 inches, the smallest 2 feet 1 inch, the mean girth being 4 feet 1/2 inch.

In this connection it is interesting to note the measurements of wild *Hevea* trees made by Robert Cross in 1877 near Pará. These trees had been tapped for from 5 to 15 years and their age was unknown. The figures are given in the margin.

All of these measurements were taken at three feet from the ground. It would seem, therefore, that the trees at Heneratgoda had about reached their growth.

It is as a seed bearing proposition that the garden I was visiting appealed to me most. A hasty bit of figuring gave me the total of between 3,000,000

and 4,000,000 Pará seeds that had been sent out to planters all over the Eastern tropical world. A wonderfully practical piece of work and one for which the tropical planter should be devoutly thankful.

One of the few tapping experiments extending over a series of years were carried out at Heneratgoda under the late Dr. Trimen. He selected a twelve year old tree that was 50 1/2 inches in girth, three feet from the ground. This was tapped the first, third, fifth, seventh, and ninth years, the product being 13 pounds 7 ounces of dry rubber. As in any of the tapping years but seventeen tappings were taken, and they were well distributed through the twelve months, it would seem as if the tree might just as well have been producing every year instead of every other year, and that its average of 1 1/2 pounds a year might just as well have been 3 pounds.

These experiments were followed by others by Director Willis, in which on smaller trees he secured on an average about 1/2 pound a tree, but where the trees were planted much more closely together. A curious fact in connection with the two experiments is that, supposing the Trimen trees had been tapped yearly and produced 3 pounds each, and the Willis trees produced 1/2 pound each, the result would mean the same pro-



SENSATION ROCK, NEAR KANDY.



AN UPCOUNTRY TEA ESTATE IN CEYLON.
[Great Western Mountains in the background.]

duction per acre, as the former trees stood 50 to the acre, while the latter were 300, in either case the production reaching 150 pounds per acre.

These yields, by the way, are not large, as Heneratgoda is not to be compared with other parts of Ceylon as a rubber raising locality. The many other and valuable experiments that were carried out here and at Peradeniya would fill volumes. Exhaustive experiments as to the kind of incision that gave the best results, whether the "herring bone," the X, the V, or the single, was the best, and hundreds of records carefully kept and compared to lead to the right conclusion.

Then, too, experiments by the score were made to find what part of the tree was the best to tap, whether near the base or

high up on the trunk. In addition to this a long series of experiments in the coagulation of the latex were instituted both by centrifugal machinery and by the employment of a variety of acids. It is due directly to this investigation that the Ceylon planter to-day, if he wishes to hasten the coagulation, adds a few drops of acetic acid to the latex. Nor were these experiments done in secret. The results were published and scattered broadcast among planters all through the tropical world, with wonderful results for good.

After a hasty look at the magnificent palms, of which the garden has more than 50 varieties, at the banana, pepper, and other plants, I resumed my hackery, and jolted back to the railway. As the return train was not due for half an hour, I went to the "Rest House," a hotel owned by the government and run by a trusty native, where I had an excellent breakfast. I paid the fixed charges, signed my name to the visitors, book, saying that I was

well pleased, and walking on to the station, caught the train back to Colombo. In the afternoon I hired a jinrikisha, and rode around the town. These "rickshaws" are simply huge perambulators drawn by a half naked coolie who trots along all day content with 10 cents an hour (gold). Most of the rickshaws are old and rattley, but a few lately introduced have pneumatic tires, and it is only a question of time before they will all have them.

As Director Willis had been good enough to invite me to make my home with him when I went up country to visit the Peradeniya gardens, and as I had only one suit of white flannels, I got the tailor at the Galle Face to make me another. I was measured in the morning and the suit delivered that even-



PERADENIYA GARDEN ENTRANCE.



"FIGUS ELASTICA," PERADENIYA GARDEN.
[Showing spreading buttressed roots.]



PERADENIYA GARDEN.
[Planted *Castilloa elastica* and cacao.]

ing. It cost 10 rupees [=about \$3.64] for the making, and the man who delivered it got 2 rupees, because the tailor, his master, was such a hard man to work for, and the boy who was with the man who delivered it got 1 rupee because of some affliction that he had suffered, and the dog that accompanied the boy who was with the man—well, he didn't get anything, but I vow he sat up and begged just as long as I was in sight.

I made an early start for Peradeniya, which means "guava plain," going by the government railway in a very comfortable first class car that is a sort of compromise between the American smoking car and the English compartment car, and about half the size. The government railways, by the way, are pretty generally good in Ceylon. The equipment is all that could be expected, although the cars are small; the freight cars, for example, being 12 ton affairs with corrugated iron roofs, and the locomotives look very light. The railway stations, however, are extremely good, and in most of them a white man need not wait at the ticket window, but may march into the agent's sanctum, and get his ticket before the natives are served. The profits that the railroads earn is expended on the carriage roads, a plan that some praise and some condemn. Anyhow, the latter roads are first class, and an automobilist could go from one end of the island to the other if the elephants did not object.

Soon after breakfast we were bidden to the "refreshment carriage" where a good breakfast was served for about 60

cents. After breakfast I sat on the shady side in my car, and took note of the great paddy fields in which sullen water buffalo wallowed and fed, and where natives clad only in breechcloths, and daubed from head to foot in clayey mud, toiled in a half hearted way. Soon after the scenery became more interesting as we climbed to higher ground, the road running above a winding valley where great stretches of jungle were broken by banana and rice plantations, with occasional glimpses of splendid government carriage roads, with rugged mountain ranges in the distance.

Every now and then we stopped at a neat railway station, crowded with natives, interspersed with a few Europeans, for whom, by the way, the first class waiting rooms and cars are always reserved. Between Polgahawela and Rambukkana, by the side of the track, is a very considerable plantation of *Hevea*, covering some sixty acres, the trees being planted about 8 feet apart. They are about three years old, and would average for a guess 30 feet in height.

Further on, as we still ascended, the valley below was often a series of terraced paddy plots for miles. Then as we still skirted the valley, which was farther and farther below us, we crept through many tunnels, clung to the sides of precipices, getting occasional glimpses of Adam's Peak, the famous mountain of the island, and still far below, we saw winding through the jungle—crossing rivers—the white roads, hard, smooth, wide, equal to any park roads at home, and then up, up, we climbed, the



PERADENIYA GARDEN.
[*Castilloa elastica* planted among cocoanut palms.]

cabbage palms, bread fruit trees, and tropical growths now finding their home on the rocks, or in the wash of steep mountain ravines. The air was rapidly growing dryer, a decided relief after the steamy atmosphere at the sea level; nor did I note the heat as I leaned out to see as much as possible of the great



EXPERIMENT GARDEN, PERADENIYA.
[Ceará rubber in foreground.]

tea plantations that now filled the valleys, and encroached often on the steep hill and mountain sides. The soil, where it was in evidence, had a reddish look, and would not suggest fertility were it not for the luxuriant growth it produced.

After a journey, full of intense interest, we reached Peradeniya station, and alighting from the train found Director Willis awaiting me. One of his coolies took my luggage in charge,



PERADENIYA GARDEN.
[Mr. Carruthers inoculating a young *Hevea* with Canker fungus, December, 1903.]

while his master and I walked up the broad shaded road that runs by the beautiful entrance to the Royal Botanic Gardens. A few minutes brought us to the Willis bungalow, a very pretty two story house, set on a little eminence, and hemmed in with foliage plants, flowers, and magnificent shade trees. As the new governor of Ceylon, Sir Henry Blake, had requested the presence of my host in Colombo, he turned me over for the moment to Mr. J. B. Carruthers, F.L.S., the mycologist and assistant director. Mr. Carruthers, by the way, had but just returned from a month's visit to various *Hevea* plantations, where he had been studying the canker that had appeared upon some of the *Hevea* trees. He was of the opinion that the alertness of the planters in discovering the disease in its first stages, and calling for expert advice, would result in its extinction before serious harm came to the trees.



DENDROCALAMUS GIGANTEUS."
[Giant bamboos in the Peradeniya Gardens, showing the young shoots, and a section of one.]

The disease, although new to the *Hevea* as far as known, has long been an enemy to apple trees, cacao, tea, etc., and frequently kills the tree or shrub upon which it grows. Mr. Carruthers, when first it appeared, examined portions of diseased trees, and recognized the fungus as a species of *nectria*. He then visited both the government plantations of *Hevea* and the larger private plantations. In one district, Kalatura, he found only one tree in 200 affected, but on the Edengoda estate, 20 per cent. of the trees were diseased; while at Yatiporua there were 40 per cent. The appearance of the fungus on the trees is a swelling or roughening of portions of the tree trunk or branches. If the outer bark is cut off, the tissue beneath shows at first a neutral tint, and later a brownish or claret color. When the fruit of the fungus ripens it is a very minute red dot which is carried by the wind, by water, or by tree insects, to a moist



KANDY—LADY HORTON'S WALK.

spot on the bark of the same or another tree, and there it thrives, and soon fills the tissues with its *mycelium*.

It was practically eradicated by cutting out the diseased portions and the burning of them. This is best done in dry weather. Nor did the cutting of the trees appear in any way to weaken them or hinder their growth. Mr. Carruthers had brought with him some cultures with which he proceeded to inoculate a young *Hevea* tree, while I stole away into the grass with my back to the sun, turned my kodak upon him, and pressed the button. A moment later, happening to glance downward, I saw that the grass was fairly alive with leeches, all making their way toward me. I retreated very hastily, and at once began a frantic search for them about my person. I found a lot on my shoes, trousers, and outer clothing, but was lucky enough to remove the last one before getting bitten.

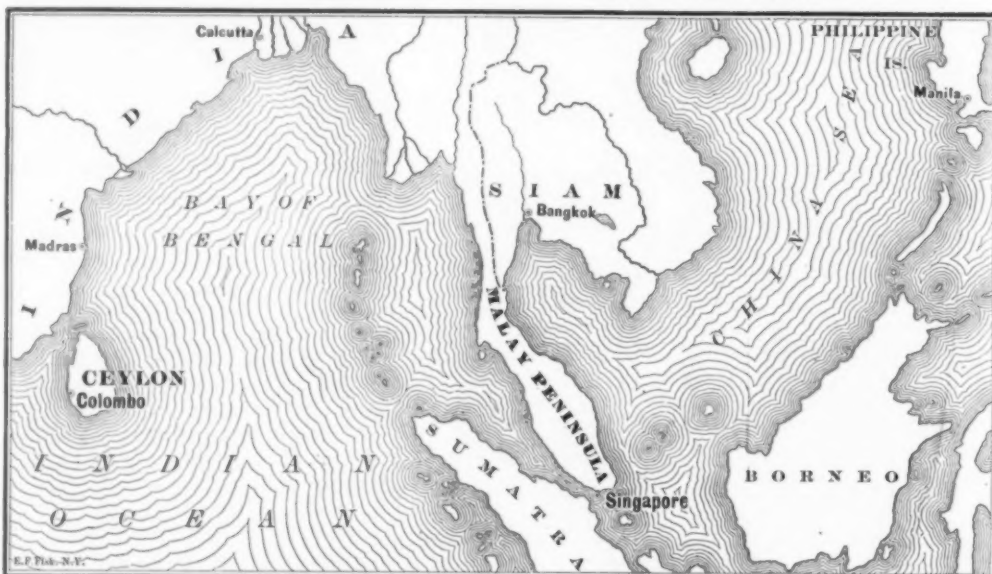
Speaking of insect pests, there are very few in Ceylon that are troublesome to man—at least I saw or felt but few. The mosquito was of course more or less in evidence, but I did not get too badly bitten. I did, however, resent its mode of attack.

It does not approach you with a song, but, in a silent crafty, suspicious way, alights, bites, and flees. So suspicious is the creature that it is almost impossible to clap it on the back, as is the custom in America when he has succeeded in puncturing one's epidermis. It, therefore, has no friends, and beds everywhere are enclosed in huge muslin screens; otherwise one would be constantly bored.

There is also the leech. It lives, not in the water, but in the grass and in the jungle. When exercising on an empty stomach, it is very small, about the diameter of a knitting needle, and from $\frac{1}{4}$ to $1\frac{1}{2}$ inches in length. On hearing footsteps, it hastens toward the sound, getting over the ground at a surprising rate of speed for so tiny a creature, and without hesitation attacks instantly. If left to themselves, they fill themselves with blood, swelling to the size of one's little finger, and then drop off. Nor does this end the incident, for during their meal they inject something into the veins, which keeps the blood from clotting, and the wound therefore remains open and goes on bleeding. If roughly removed during feeding,

it is very apt to leave its teeth in the wound, which causes inflammation, and in some cases, troublesome sores. The best way to treat them is to wear close knit stockings, into which the lower ends of the trouser legs should be tucked. This keeps most of them off, but if they do get on one, a few drops squeezed from a fresh lime makes them let go at once. Many of the natives, who expect to encounter leeches, carry a lime or two about them. Others simply pull them off, and take the chance of the wound inflaming. In certain districts these leeches are a great pest, but as the land comes under cultivation, they gradually disappear. It is said that during the conquest of the island by the British, many a private soldier lay down in the jungle after an exhausting day's march and never awoke, his veins being literally drained dry by the swarming leeches. They are as tough as if made of India-rubber, and about the only way to kill them is with fire. If cut in two the separated parts will join together again, and they are always voracious, active, and absolutely devoid of fear.

[CONTINUED NEXT MONTH.]



MAP SHOWING POSITION OF CEYLON AND THE MALAY STATES.

VARIOUS RUBBER PLANTING COMPANIES.

REPORT ON PLANTATION "RUBIO."

THE report of the official inspector chosen by the subscribers to the bonds of the Tehuantepec Rubber Culture Co. for the year ending December 31, 1903, Mr. Grosvenor Calkins, an attorney of Boston, Massachusetts, covering his visit to the plantation made in January last, and now appearing in pamphlet form, is the most definite and comprehensive document of its kind that has yet been issued by any rubber planting company operating in Mexico. It is a thoroughly businesslike statement, composed of details capable of verification, and thus of interest and value as a record of progress in this new industry.

Mr. Calkins begins by saying: "No cultivated rubber has yet been produced in quantities in tropical Mexico. On the other hand, rubber trees have for some years been grown experimentally. These tests have already established two important facts: First, that conditions are favorable to the rapid growth of cultivated rubber plants, and, second, that these rubber trees will yield marketable rubber. The general conditions favorable to the cultivation of rubber, namely, a well drained soil without shade, have also been determined. The Rubio plantation consists of two series of hills draining into rolling valleys from which all shade has been removed."

Other considerations bearing upon planting conditions are then treated at length, after which the inspector summarizes the estimates obtained from various American planters in Mexico, of the lowest yields for cultivated rubber trees at different ages:

Average 6 year tree will produce without injury 4 to 6 ounces of rubber.

Average 7 year tree bled to death will produce about 1 pound of rubber.

Average 8 to 10 year tree will produce without injury at least 1 pound of rubber.

The planting during the two years 1902 and 1903 is reported on in detail, with a statement of the condition, good or otherwise, of the several different tracts. The planting in 1902 amounted to 1499 acres, on which, allowing for failures, there are now estimated to be 1,600,000 plants. It is noted that the height of the trees grown from seeds—about 65 per cent. of the whole—is greater than that of transplanted or replanted trees. The planting in 1903 amounted to 520 acres, on which, after again allowing for failures, there are 595,000 plants. The number of plants, of course, is much greater than will be allowed to stand permanently, but it has not yet been decided at what age to begin thinning out.

"In order to protect the young plant from being cut at the first weeding, it is necessary in some way to indicate the location of the plant. In the 1902 planting the usual practice of marking the young plant with a stake was resorted to. In the spring of 1903, Manager Luther devised the plan of planting corn to mark the rubber. The corn developed more rapidly than the rubber, saved the expense of staking, was easily and economically harvested, and produced a yield which went far to supply the whole plantation with this essential commissary item. As the price of corn on the isthmus has been very high this year, the saving effected by this device has been considerable."

The harvesting of corn in 1903 from the spring planting was about 8500 bushels. A still larger planting of corn was made

in November and December. The average number of laborers employed during the year was 327, exclusive of cooks, at a cost, including commissary, of \$135,468.93, Mexican, which was exclusive of cost of superintendence, new construction, office expenses, and general maintenance.

Mr. Calkins concludes: "The opinion has been universally expressed by every person qualified to express an opinion that large returns are assured from rubber culture, provided that there is sufficient capital and patience to wait ten years, if necessary, for returns."

THE TULIJA RIVER PLANTATION CO.

[Plantation "Tulija," department of Palenque, state of Chiapas, Mexico. Office: 903-904 Old South building, Boston, Massachusetts.]

INCORPORATED under the laws of Maine; paid capital stated at \$100,000. Own 6177 acres on the river Tulija, in Chiapas, Mexico, 50 miles from the town of Salto. They offer for sale, at \$300 each, payable in installments, 1000 certificates, representing 1000 acres, which the company undertake to clear and plant to rubber, 200 trees to the acre, and care for the same for 10 years, after which the investor may take title to the land. Meanwhile certificate holders will be entitled to one half of the net profits during each year. Officers: *Elisha H. Brewster*, lawyer, Springfield, Mass., president; *Ethan H. Cutler*, former European selling agent United States Rubber Co., now of Newton, Mass., vice president; *David Allen Reed*, real estate, Springfield, treasurer; *Alfred W. Faithfull*, Boston, secretary and general manager.

MR. VERNON BACKUS ON MEXICAN PLANTING.

THE *Mexican Herald* (February 29) contained an interview with William Vernon Backus, a banker and former lawyer of Cleveland, Ohio, and who is now an extensive investor in Mexican development enterprises, in which it is intimated that several projected rubber plantations in that country have been abandoned. But no rubber plantation company has failed, he says, through inability to raise rubber in Mexico. "Rubber was first discovered in Mexico [in Columbus's time] and anything that grows native to the soil without cultivation can be grown and improved by cultivation." He intimates that some companies have failed through the lack of intelligent management of their business affairs—such as devoting their capital to the making of improvements without paying the purchase price when due, with the result that the land and improvements would revert back to the former owner. Another mistake has been in filling the offices of some companies with men of wide acquaintance with possible investors, rather than men especially qualified for the business to be done. Mr. Backus said that his investments for the last eight years have all been made in Mexico, and his future investments will be made there, because of the good administration of the laws and the protection afforded to property there. Mr. Backus is now interested in three Mexican plantations which include rubber.

PLANTATION SUPPLIES FROM NEW ORLEANS.

A NEW ORLEANS newspaper mentions the purchase in that city of a considerable quantity of supplies in behalf of a rubber planting company having an estate in Mexico, and a contract for the shipment of further supplies during the year. The purchases included groceries, all sorts of household furnishings, and tools and agricultural implements. The same company also made purchases of live stock for breeding purposes.

Hitherto the rubber planting companies in Mexico have bought their supplies chiefly in St. Louis and Chicago. The newspaper referred to asserts that equally favorable prices can be quoted by New Orleans merchants, while lower freights can be obtained. The newspaper continues: "There are something like 25 large rubber plantations in Mexico, and if all of the trade of these plantations is attracted to New Orleans, it will mean an increase of at least \$2,000,000 in the export business of the city."

BADGER MEXICAN PLANTATION CO.

[Plantation "La Florencia," near Santa Lucrecia, state of Vera Cruz, Mexico. Office: Robinson building, Racine, Wisconsin. See THE INDIA RUBBER WORLD, May 1, 1903—page 254.]

THE company named above is incorporated under the laws of Maine, with \$1,050,000 capital authorized, of which \$210,000 has been used for the purchase of lands, with valuable improvements, from the Badger Mexican Planters' Co., a corporation under the laws of Wisconsin, the purchasers of "La Florencia" from Samuel D. Dorman, and neighboring property. These lands lie in the Trinidad valley, on the Vera Cruz and Pacific railway. On "La Florencia" are 25,000 coffee trees in bearing and 25,000 rubber trees now from 3 to 7 years old, some of which have yielded satisfactorily this year, and 25,000 rubber trees planted in 1903. A large planting of rubber has been contracted for this year. Upon an adjoining tract preparation has been made for planting 400 acres of sugar cane. Mr. Dorman has been made resident director of the plantations. The coffee planting on "La Florencia" will not be increased, but it is intended to increase the rubber plantation to 1000 acres. The company named in the heading of this article is offering treasury stock for the purpose of providing for the new development work in progress, which is being conducted by the other company named—the Badger Mexican Planters' Co. The officers of the former are: W. W. Allis, president; P. M. Wackerhagen and Charles E. Seiler, vice presidents; W. E. Fish, secretary; Charles R. Carpenter, treasurer; William S. Fish, assistant treasurer.

SELANGOR RUBBER CO., LIMITED.

THE headquarters of this plantation company are at Glasgow, Scotland, but the principal shareholders are Ceylon planters who took up lands in the Straits Settlements for the use of the company. The capital is £30,000, of which, at the end of 1902, only £16,500 had been called up, and the expenditure to that date had been £15,911. The company had to show for this the following acreages of Pará rubber trees:

| Acres. | | Acres. | |
|--------------------|-------|------------------------|------|
| 2 to 5 years..... | 215.5 | 7 months..... | 239 |
| 3 to 3½ years..... | 138.5 | New planting..... | 67 |
| 2½ years..... | 146. | | |
| 2¼ years..... | 163.5 | Total..... | 1006 |
| 1½ years..... | 36.5 | [About 200,000 trees.] | |

The oldest trees averaged about 25½ inches in girth three feet from the ground, and the three year old trees, 12½ inches. This is said to be one of the most promising Pará rubber estates in the Far East, and the £1 shares are quoted at £3. A director in the company, writing to THE INDIA RUBBER WORLD, says: "As to your remarks with reference to the Ceylon 'Pará' rubber, you will find that, like all the products put on the market by the Ceylon planters, it will prove to be the finest! Witness coffee, tea, etc."

BUKIT RAJAH RUBBER CO., LIMITED.

REGISTERED in London, with £70,000 capital, in £1 shares, to acquire the estates in the district of Klang, state of Selangor, on the Malay peninsula, known as Bukit Rajah, Sungei Binjai, New Eskdale, Delabole, Bukit Duku, and Booneans, to plant and cultivate India-rubber, Gutta-percha, and other native products. The first directors are H. K. Rutherford, N. W.

Grieve, G. A. Talbot, and C. B. Rendle. Registered office: 20 Eastcheap, London, E. C., which is the headquarters of the Ceylon Tea Plantation Co., Limited, one of the important tea planting companies with which Mr. H. K. Rutherford is identified.

RANI RUBBER CO., LIMITED.

REGISTERED to take an assignment of a lease of 500 acres of government lands in the state of Travancore, British India, to George Nicol Thomson, and to convert the same into a rubber plantation. Nominal capital, 300,000 rupees [= \$97,330], in 3000 shares. The subscribers to the articles of agreement are all residents of Colombo, the first directors being the Hon. J. N. Campbell, A. A. Prideaux, G. N. Thomson, and J. G. Wardrop. Travancore is a small native state, ruled by a maharaja, under British control, at the southern extremity of India, and near the island of Ceylon.

MEXICAN MUTUAL PLANTERS' CO.

[Plantation "La Junta," Sanborn postoffice, state of Vera Cruz, Mexico. Offices: New York Life building, Chicago.]

MR. JAMES C. HARVEY has been appointed manager of this estate, which embraces one of the most important of the commercial rubber plantations in Mexico. With Mr. Harvey's record in rubber planting, readers of THE INDIA RUBBER WORLD are familiar, he having developed an extensive private plantation of rubber at a point not far from the "La Junta" estate, and in which he retains his interest. Mr. Harvey succeeds Mr. George B. Mann, who had been plantation manager since the organization of the company in 1898, and who resigned recently to devote his attention to real estate and other private interests in Mexico. A large amount of planting of rubber is being planned at "La Junta" this year.

TEN YEAR OLD "CASTILLOA" IN MEXICO.

A RUBBER plantation of 20,000 trees planted ten years ago is reported to exist near Playa Vicente, in the district of Cosamaloapan, state of Oaxaca, Mexico. This plantation, known as "Mano Marques," is owned by the L. & H. Pinto Co., Limited, of London. The *Mexican Herald* quotes Lyonel Pinto, who has been recently in Mexico, to the effect that some of these trees were tapped for the first time in May, 1903, and the entire product sold to the Castle Rubber Co., Limited (Warrington, England), who made a favorable report on the same. It is intended this spring to tap a larger number of the trees.

MR. JOHN A. MORTON, for some time connected with large rubber planting companies in Mexico, has associated himself with the Costa Rica Rubber Co., and has gone to Costa Rica to take charge of a *Castilloa* proposition at the company's plantation. The headquarters of the Costa Rica company are at Los Angeles, California, and their plantation at San Carlos.

RUBBER PLANTING COMPANY PUBLICATIONS.

THE Tehuantepec Rubber Culture Co., New York.—Report of Official Inspector, Grosvenor Calkins, for 1903. 16 pages.

Conservative Rubber Production Co., San Francisco, California.—Bulletin No. 5 [Report of first annual inspection, by A. M. Foulks, committee for shareholders; Plantation "Ystilja," state of Chiapas, Mexico, mentioned in THE INDIA RUBBER WORLD February 1, 1903—page 153.]

The Badger Mexican Plantation Co., Racine, Wisconsin.—(a) A Milestone Upon the Highway of Progress. 30 pages. (b) Convincers. 20 pages. [Prospectus and plans of a rubber and sugar planting enterprise.]

Mutual Rubber Production Co., Boston, Massachusetts.—Bulletin No. 10 [of progress on the estate in Chiapas].

Orizaba Rubber Plantation Co., Chicago, Illinois.—Report to the Certificate Holders by Mr. Howard Little, Inspector. Also, Supplementary Report by the President, Mr. J. B. Sanborn. April, 1904. 16 pages.

Isthmus Rubber Co., New York.—Investments, 12 pages.

THE MANUFACTURE OF SHOE LASTS.

THE coming molded rubber shoe may, in the course of time, render maple lasts superfluous but, until then, in every variety of style, width, and size, they will continue to hold an important place as one of the expensive accessories of the rubber shoe industry. The lumbering for maple timber from which shoe lasts are made takes place in the woods of northern Maine and Canada.

The felling of the trees is done in winter when the sap is down out of the trunks, and the snow covered ground affords good hauling. The trees are very carefully selected, because not all maples are adapted to make good last blocks. The best variety is the rock maple, better known as the sugar maple. The trees are cut for last blocks where it does not pay to continue the manufacture of maple sugar. The habit of the rock maple is to grow in clumps or groves, oftentimes many miles apart, which greatly increases the labor and hardship of lumbering. It is a strenuous sort of life, fifteen or twenty miles back in the bush, felling trees in the snow, with the temperature 15° below zero. It sometimes happens that unusually heavy snowfalls will cut the camp off from supplies of fodder for the animals and necessitate killing them.

After felling and trimming, the timber is hauled on runners to central points near camp and there cut, generally by horse power with a drag saw, into block lengths. The bark is removed from these sections and they are then marked on the end with the pattern of the block desired. With these outlines as guides, the tree section is carefully split into blocks of the



FIG. 1.

general shape shown in Figure 1, which represents the side and both end views of a rough block as they are usually cut.

The work of splitting is carefully done by holding a broad axe on the mark, while it is struck by a blow from a wooden mallet or beetle. When thus roughly split the blocks are packed for seasoning or air drying in open sheds, for nearly two years. Following this long interval of open air drying, comes a period of three months in a warm kiln at the last factory before they are ready for the turning lathe. Indeed, they generally go from the kilns to a drying room of lower temperature, where they are kept in stock and from which they are selected and removed as needed for turning.

The standard irregular turning lathe shown in the illustration is one of the notable inventions of the nineteenth century. It has undergone improvements which make its capabilities still more remarkable to-day than when first invented. On these machines such irregular forms as shoe lasts, hat blocks, gun stocks, and many other unsymmetrical shapes are turned, not only to the exact dimensions of a given model, but in various gradations of sizes, larger and smaller, or right or left, in which the proportions of the model are perfectly reproduced. The machine is known as an "improved reverse last lathe." It is an American invention, the result of forty years of experience, and in general use for last turning in this and many foreign countries.

The machine turns both "rights" and "lefts" accurately

from one model, and grades five sizes both larger and smaller than the model size. The capacity varies from 50 to 100 pairs per ten hours, according to size and fineness of feed. It requires about 1½ horse power to operate it. The speed of the cutters varies from 4500 to 5000 revolutions per minute.

The principle on which the machine operates is not difficult of comprehension. The model last is centered in one side of a

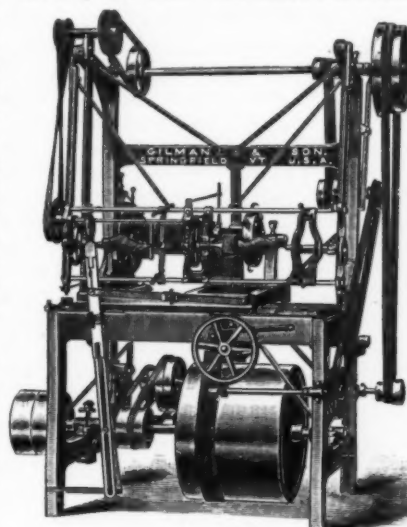


FIG. 2. LAST LATHE.

swinging frame, and the block to be turned, roughly cut on a circular saw to approximate dimensions, is centered in the other side of the frame, on the same axis. The model rests against a guide wheel and as each revolves the latter also travels, by an adjustable feed, lengthwise, thus traversing the entire area of the model. The block to be turned revolves in unison with

the model and in contact with the cutting wheel or head. The swing of the frame is determined by the contour of the model and as the latter rises and falls on the face of the guide wheel the block also similarly advances and retreats against the cutting wheel and a duplicate of the model is cut in the block.

Variations in size or width and in right or left are simply a matter of detail in adjustment. The cutters on the face of the wheel are gouge shaped and several in number and are adjusted each in advance of the preceding, thus making a progressive cut capable of removing rapidly a considerable depth of wood. Immediately around the cutting wheel is arranged a



FIG. 3. COLLECTION OF LASTS.

sheet metal hood connected by piping with a powerful exhaust fan for removing the turnings as fast as they are produced. The rough blocks assume the fine lines and contour of the model with fascinating exactness and rapidity, and come forth in five minutes or less, perfect reproductions of the original.

The illustration of last blocks and lasts (Fig. 3) shows three lasts with the "centers" attached as they come from the lathe. These "centers" are the supports on which the block revolved, and are removed by means of the "block knife"—a sort of long handled cleaver, which is supported at one end in a ring bolt, which affords a fulcrum on which to get a leverage to slice off the hard wood and trim down to size.

After this trimming the toe and back of the heel are carefully shaped with a spoke-shave and wood rasp to the exact dimensions of a pattern or metal template. Following this the last is scoured or smoothed on a sand wheel, to remove the fine grooves on the surface caused by the "feed" or progress of the cutters over the surface. Next they are stamped on the bottom with width and size marks and the tops bored with a pair of holes which serve to hold the last on the shoe rack when in use.

The average life of maple lasts in daily use in a rubber shoe factory is about two years. The frequent long continued heat of vulcanization gradually disintegrates the wood and slowly chars it, causing the sharp edges to gradually wear away with frequent handling, none too careful at best. With the sharp edges gone, the last has so far departed from the shape of the model that it is practically useless for shoe making, and ends its mission as fire wood. The edges of the model are carefully protected against wear in the lathe by a series of iron brads inserted along all edges, and filed up true to form, in effect, a metal edge.

PRODUCTION COST OF INSULATING TAPE.

BY AN EXPERT.

IT is perhaps twenty-six years since it was first found that calendered friction cloths were useful in electrical construction, when wound in convenient rolls of narrow width.

Up to five years ago this steadily increasing business was divided among the mechanical rubber plants, and possibly the average output was at the rate of 500 pounds per day. High prices prevailed, and until 1895 little or no tape was sold below 35 cents. Between 1890 and 1895 the prices were hammered down to 25 cents, and since that time have frequently touched 17 cents, with some misguided lambs occasionally breaking to 16 cents per pound.

Bear in mind that during this period the price of crude rubber was continuously advancing, and that to-day tape manufacturers are paying 100 per cent. or over more for their soft rubbers.

The recent advances in cotton, nearly 100 per cent. in four years, should also receive attention. Still the largest concerns who now handle tape have not made advances of over 10 per cent. in their prices, and are held down to that point by the reckless competition of small plants that, with a capital for getting perhaps an average of orders for 500 pounds per day, do not hesitate to suppose themselves capable of quoting lower prices than the big producers that average 3000 pounds per day.

It will readily be seen that all are on about the same basis in the cost of materials. The cheapest compound that will stay sold costs 5 cents per pound and cotton is worth .2430 per pound in the 40" width, the grade used by all.

On the cheapest grades 4 pounds of compound is loaded on to each pound of cotton, producing a tape costing .0886 per pound for material alone. The old fashioned manufacturer of rubber goods would doubtless consider that between the above

cost and a selling price of 17 cents there was an ample margin of profit.

It is, therefore, of great interest to note the information which careful factory cost keeping gives when supplemented by general bookkeeping.

The figures were given by one of the largest tape manufacturing companies and are based on sales of about half a million pounds. The tape was of many different grades and made in a general rubber goods plant which has special facilities for low operating expense.

| | |
|--|-------------|
| Express and freight bills (tape sold delivered)..... | \$ 3,122.90 |
| Taxes (apportioned)..... | 581.89 |
| Insurance..... | 298.73 |
| Rent..... | 590.39 |
| Merchandise discounts..... | 573.48 |
| Telephone services and telegrams..... | 179.96 |
| Coal (power)..... | 1,143.33 |
| Packages (shipping department materials)..... | 2,297.10 |
| Tin foil and cartons..... | 3,728.86 |
| Commissions to agencies..... | 2,060.89 |
| Traveling expenses..... | 2,827.16 |
| Interest..... | 2,385.79 |
| Unclassified expense..... | 993.56 |
| Bad accounts..... | 33.49 |
| Postage..... | 230.68 |
| Labor and salaries (executive)..... | 8,036.50 |
| Labor and salaries (productive)..... | 12,088.55 |

Total expense items..... \$42,073.26

Total expense item cost per pound..... \$0.0883

Crude cost per pound..... .0886

Net cost of tape per pound..... \$0.1769

It is to be regretted that the "factory waste" item is not included in this account, "being too mixed up with the other business going on to apportion accurately". Pressed for an estimate, a figure of \$900 was given, which is manifestly low enough, as there is no item for "returned goods," "bad goods," and "experimental work". Leaving out these important items, the "factory waste" estimate brings the expense items up to .0909 and the total manufacturing cost of the cheapest pound of tape to \$0.1795.

That these figures are of value there can be no doubt. A new concern which could scarcely hope to secure a business of over 500 pounds a day for the first six months would have an expense cost far above this, to say nothing of an advertising expense besides.

When it is considered that at least two factories are doing a business of over twice the total on which this article is based, and that their increased output saves them only about 2½ cents per pound in their expense items, it will be seen that they can and do earn a handsome income while selling below any competitor's actual cost. Evidently they are amply satisfied with a net profit of about 2 cents per pound.

EDITORIAL NOTE.

THE above article was written by one who is heartily tired of competition by those who apparently do not know how to figure factory costs, and with the idea of giving them, if such there be, a chance to think. A careful analysis of it leads one to think that he has made out a strong case, but not as strong as it might be taking his own figures. For example, his item for power, \$1143.33, does not seem enough. To do the work indicated a washer, two mills, and a calender are necessary; in other words a 100 HP. plant, which would ordinarily cost nearer \$4000 a year than \$1100.

Then, too, the "bad accounts" is very very small. If the company under consideration sells to the little dealers, it might easily be many times \$33.49. As a matter of fact, the business under discussion reaches to about \$100,000 a year, and it would

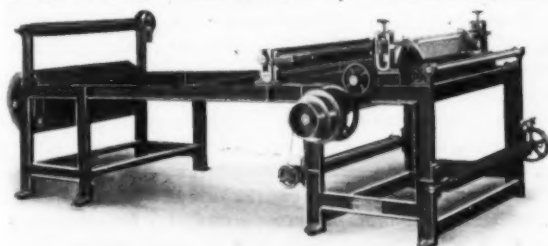
be beautifully handled if the bad accounts did not reach to at least \$1000, or 1 per cent. of the total.

The writer acknowledges that he has no figures for "returned goods", "bad goods", or "experimental work", which are even larger items than he appears to realize. In experimental work alone in a business of this volume this item would very easily reach \$5000 a year.

RUBBER FACTORY APPLIANCES.

A NEW SPREADER AND DOUBLER.

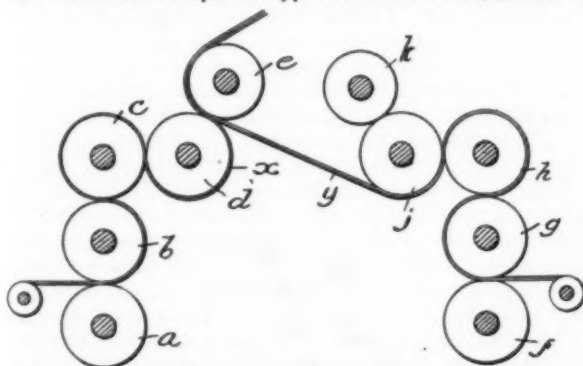
THE spreader and doubler shown in the accompanying cut is simple, inexpensive, and does the work excellently. Its method of operation is as follows: The cloth to be spread is put on the small rolls at either end of the machine. That coming from the roll at the front end passes up and under the spreading knife, where the solutioned rubber is applied, after which it meets the cloth from the roll at the back of the machine. The two fabrics with the rubber between them then pass through the compression rollers, where they are firmly united.



From this point the cloth passes over the large drum at the back of the machine to the wind up roll directly under the compression rolls. The "wind up" is driven by a chain and sprocket, and is fitted with a friction, as are the two cloth carrying rolls, to allow of an adjustment of the tension. The thickness of the coating can easily be gaged by adjusting the knife by means of side screws. The weight of the machine complete is 1950 pounds. [The New England Butt Co., Providence, Rhode Island.]

A TEN ROLL CALENDER.

MR ARTHUR N. HOOD, of the Hood Rubber Co. (Boston), is the inventor of a new system of working rubber that appears to be perfectly practical and very simple. Compounded rubber has long been sheeted by a building up process—that is, by running a thin sheet and then calendering one or more sheets upon it. This ensures a denser sheet and allows the manufacturer to use for example one type of stock as a base, another as



a filler, and a third for a cover. These sheets as a rule are put through the same rolls again and again, until the desired thick-

ness is attained. Mr. Hood's device, however, has a multiplicity of rolls and does the whole business at once, besides embossing the upper surface. To accomplish this result he has what are practically two small five roll calenders with the rolls so arranged that any part is easily accessible. Of the ten rolls shown, that marked *d* is engraved, while all the rest are plain. If, therefore, a cheap basic stock is sheeted on the right hand calender, and meets a better grade, covering stock, coming from the left hand machine, the two would be united by the roll *e* and embossed by the roll *d*. The machine is so built that the rolls are interchangeable and if desirable it can be reversed, rendering it extremely convenient for manipulation. It is covered by United States patent No. 752,975—February 23, 1904.

COVERING FLEXIBLE CONDUITS WITH RUBBER.

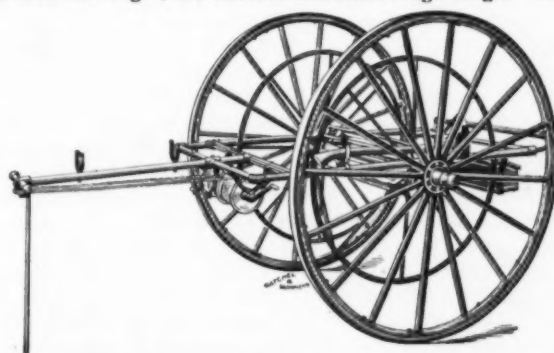
THIS is the invention of a practical rubber man and consists of an apparatus for coating, drying, and cleaning flexible conduits. The conduit in the application of this principle is passed first through a coating pan, partially filled with rubber cement, on one side of which is a spreading device. From here it goes to the drying device, which consists of a table and steam coil encased in perforated sheet metal, the conduit being supported



and carried by an endless belt. After drying it goes through the cleaning apparatus, which consists of a vessel set on standards, provided with guide rollers, and a pair of brush rollers. As will be seen, the machine is very simple and the work can be done quickly and effectively. The spreading device is so made that a variety of thicknesses can be applied to the surface of the conduit. The inventor is John T. Dickey, of Barberton, Ohio, to whom has been granted United States patent No. 701, 472.

A NEW VILLAGE HOSE CART.

THE illustration below relates to a new line of wood wheeled hose carts for village use. The frame, reel, and tongue are formed of tubular steel, making a strong and durable cart of medium weight, and one that will stand rough usage. They



are equipped with fireman's axe and rack, crowbar and holder, automatic brake on reel, tool box, friction roller, pipe holders, tongue rest, and rope reel and drag rope; polished brass hub caps, and handsomely painted and striped. Roller bearings and also arch and bell, if desired. The capacity of the type of cart here pictured is 400 or 500 feet of 2 1/4 inch rubber hose, according to size; height of wheels 4 1/2 to 5 feet; weight, 350 and 450 pounds. Rubber tires, if desired. [Wirt & Knox Manufacturing Co., No. 22 North Fourth street, Philadelphia.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE article on this topic in the March issue of THE INDIA RUBBER WORLD is interesting, and no doubt there are many who would like to see it supplemented by an account of foreign rubber imports into England. It appears that the Americans are now making themselves several lines of goods, at one time imported. Except, perhaps, vulcanite and toys, Great Britain claims to be able to produce all rubber goods that are in demand, and of a superior quality to what is imported, but of course there is the fiscal question, which undoubtedly reacts against the manufacturers' interests. Some speculation has been rife as to the particular goods which were imported so largely from the Continent last year as to call for special notice at the hands of the chairman of the Silvertown company meeting. The goods were not specified, though no doubt many in the trade could indicate them or enlighten my ignorance on the matter. Against this instance of successful invasion, however, there are certainly other cases where the attempt to oust home made goods from the market has resulted in dismal failure. I don't know who would undertake to write the article I have suggested. Interviewing on trade topics is by no means so easy or so productive on this side as it appears to be in America, though with the general disinclination to give information there is an equally strong inclination on the part of individuals to hear what their fellows have to say.

AT 47, Farringdon street, London, is situated the European headquarters of the great American combination of rubber footwear manufacturers. It cannot be said that this company competes to any great extent with British manufacturers, because with the exception of perhaps three firms the class of goods of which the bulk of the American imports consists are not made in this country. Besides boots and shoes of all descriptions, the United States Rubber Co. are now doing a large business in motoring garments, there being an increasing demand for the heavy macintosh type. With regard to the boots made by the company I may mention the increasing appreciation among officers of the army of the "Squadron" military boot. These boots, generally known in the service as "gum boots," do not form part of the regulation outfit, but are used in undress for many purposes where the leather boot is not compulsory and under conditions where it would be likely to get spoilt, or at any rate very dirty. "We look upon gum boots," said a staff officer at one of our great military stations to me in response to a query on the subject, "much as the ordinary man looks upon carpet slippers—as a great convenience, but not intended for show purposes." Another direction in which I think such boots might find a wider application is in metal mining, in the case of those who have to pay official visits at intervals. Of course such boots would require more careful treatment than hob nailed leather, but at any rate they would be watertight, which is a *desideratum*.

THE annual meeting of this society is to take place this year in New York next September, and an attractive program, including visits to the St. Louis exhibition, Niagara, Pittsburgh, and other places has been arranged. The New York section of the society is one of the latest, but it has made a name for itself, and from all accounts the members seem determined to make the meet-

ing a success. It cannot be said that the rubber trade is very strongly represented in the society, as regards its British sections. I don't know how far this holds with respect to the New York section, but the Canadian section at any rate has in Mr. Harold von der Linde, of the Gutta Percha and Rubber Manufacturing Co. of Toronto, a prominent representative of the trade both on its scientific and commercial side. Times not being too good at present in many British industrial circles, it is a matter of serious consideration for a good many members whether they can afford the time and expense to make the trip. I do not imagine that the number of travelers will be very large, these long distance affairs appealing to the affluent and independent members rather than to the larger number who cannot well be placed in this category. In the list of abstractors of scientific publications for the *Journal* of the society the name of Mr. J. K. Burbridge is to be seen. In Mr. Burbridge, who is departmental manager and chemist at the rubber works of Messrs. William Warne & Co. (London), the publication committee must be congratulated on the assistants they have obtained and one cannot help feeling that Mr. Burbridge with his wide practical knowledge must often feel inclined to add some caustic remarks of his own when dealing with the regular crop of patent substitutes for rubber. The president of the society this year is Professor Sir William Ramsay, K. C. B., F. R. S., who is at present engaged in a chemical investigation into the constitution of Gutta-percha—a body to which he seems first to have given serious attention when appointed as advisory expert to the Gutta Percha Corporation, Limited, formed in London some years ago, and of somewhat unfortunate memory.

DESPITE the jubilant tone in the remarks of the chairman, Sir Charles Evan-Smith, at the meeting of the Marconi Co. in London, as to the conclusion of negotiations with the general postoffice, there did not seem anything in the speech to cause quakings in the hearts of the cable companies. The over sea business has apparently still serious difficulties to overcome, and it is evident that the panic among cable company shareholders some little time back was decidedly premature. That last year was an exceedingly wet one needs no emphasis, and the mining companies in Cornwall have had serious difficulties with the inflow of water. Personally, I should hesitate before indicting the Marconi telegraph as being a prime cause of the bad weather, but it has been assailed in wordy warfare at mine meetings and to judge by some of the utterances a practical assault on the telegraph station would appear to be not improbable.

WITH the reopening of the premises recently occupied by Messrs. Wallington, Weston & Co. at Limpley Stoke, by a new company known as the Limpley Stoke Rubber Co., the number of rubber firms in that agricultural portion of England has been increased to four, the others being The Avon Rubber Co., of Melksham; Messrs. Spencer, Moulton & Co., of Bradford-on-Avon, and Messrs. Wallington & Weston, who are now located at Frome. As the latter firm was an offshoot, so to speak, of the Avon, so the Limpley Stoke Co. in its *personnel* was at one time closely identified with those who lately occupied its premises. With the recent addition to the works, the Avon Rubber Co. has now quite an imposing appearance, and a corresponding increase in business;

AMERICAN
IMPORTS
OF RUBBER
GOODS.UNITED STATES
RUBBER CO.THE
MARCONI
COMPANY.

DOWN WEST.

SOCIETY OF
CHEMICAL
INDUSTRY.

indeed all the firms in that quarter speak as if they had nothing to grumble at in the way of trade.

THE recently published will of Mr. George Ash, of Claudius, Ash & Sons, Limited, manufacturers of dentists' materials, indicates that this branch of business is a profitable one; £300,000 odd is a substantial sum to leave, though of course it has not all been made out of the goods with which we are concerned in this Journal. Still from what I know of the prices charged for dental rubbers of various kinds, and the grumbles of individual dentists on the point, it is clear that the business has not been carried on at cut prices. Some few years ago the dissatisfaction of the dental profession—not, be it understood, at the quality, but merely at the price of Messrs. Ash's goods—led to the formation of a new company, in which many dentists of repute are shareholders. This company is called the Dental Manufacturing Co., Limited, and has a capital somewhere in the neighborhood of £100,000, paying its shareholders substantial dividends. It is perhaps worthy of mention that it is in dentistry for the million, as carried on particularly by the exponents of American practice, that the bulk of the compound vulcanizing rubber is used. Such material is not used to any great extent by those whose patients belong principally to the wealthy classes, its place being taken largely by gold plate. With regard to Gutta-percha, I do not find that the artificial product, New Gutta, has been brought particularly before the dental profession; probably the amount of prospective business is not such as to warrant the expenditure which would be entailed, though if it is true, as I am credibly informed, that some dental rubber is retailed at £2 per pound, the profits on Gutta-percha may be such as to excite interest and cupidity.

It is not surprising that the rapidly approaching end of the Dunlop monopoly is heralded with a good deal of speculation as to the course of events after October next. That competition will become keener goes without saying; in the meantime it is interesting to note that the Dunlop company have some interesting novelties in preparation. I understand from a source which is trustworthy, albeit not official, that great things are expected from the chain fabric tire, samples of which have survived severe road tests in a most satisfactory manner. This fabric, I may say, is the invention of Mr. Midgley, of Birmingham, a coworker with Mr. S. F. Edge, of motoring fame. The patent rights are now the property of the Dunlop company, who have been engaged in their exploitation for some time, though the material is not yet on the market. Briefly described, the iron chain fabric, which is specially manufactured in Birmingham, has a rubber surface applied to both sides. It is then subjected to a high degree of pressure and vulcanized under pressure in molds to form a homogenous body. The customary use of canvas is here, it will be seen, dispensed with. I understand this fabric is specially intended for motor rather than cycle tires.

It is announced that a receiving order in bankruptcy has been made against Mr. Henry Cresswell, of Woodley Bank, Hyde, near Manchester, and the fact will come as a surprise to many who watched the building of his fine residence in the neighborhood of the erstwhile Hyde Imperial Rubber Co., where his fortune was made, and subsequently lost. It would of course be out of place at this juncture to refer to strictly business matters, but one may make the general remark that Mr. Cresswell was one of those who profited largely in the early days of the tire industry but who subsequently got stranded in the shoals and quicksands of its competitive days. After closing his connection with the firm above mentioned, Mr. Cresswell founded the

North Cheshire Rubber Co., a concern which seems to have found itself in difficulties almost from its birth.

AT the sale by tender on April 20 the Gutta-percha amounted to 50 tons and the rubber insulated wire to 4 tons. There were also 10 cwt. of ebonite shavings and dust. The amount of Gutta-percha is rather above the average of recent half yearly sales, a fact which shows that the extended use of the dry core or paper insulated telephone wires has not had the effect of ousting Gutta-percha insulation.

AT the moment I am not in a position to give any details of the new rainproofing process which was referred to at the recent annual meeting of J. Mandleberg & Co., Limited. The fact, however, that the firm's energies are being exerted in this direction is important as indicating the direction of popular demand and can hardly, therefore, prove comforting to those who predicted a great revival of the rubber proofing trade.

THE result of the libel action brought by Captain de Keyser against Captain Guy Burrows, author of a volume bearing the subjoined title, will hardly prove welcome to those who have joined in the protest against the alleged Belgian cruelty and rapacity in the Congo Free State. The fact, however, that Captain de Keyser recovered substantial damages does not at all show that the charges generally are untrue. In this case a mistake seems to have been made and the author has to bear the penalty. It is hardly possible that wholesale defamation of the character of the Belgian authorities and traders can have been indulged in, and I have not seen any indications in the press that the just demands of the powers for an enquiry will be abandoned, though of course the London action will not be minimized in Brussels. It has to be borne in mind, moreover, that Captain Burrows was without the assistance of a most material witness whose presence might have materially altered the aspect of affairs. Lectures on the subject, I may say, are now being given in English provincial towns and if all that has been and is being said is untrue the prospects of the lawyers in view of libel actions must be considered extremely bright.

THE INDUSTRY IN AUSTRIA-HUNGARY.

THE Vienna *Gummi-, Gutta-percha-, Asbest- und Celluloid-Zeitung* says: "The efforts made of late to place this industry in a healthy condition, which is very much needed, seem to have had but little success. While the number of establishments employed in this industry is comparatively small, a material overproduction is the rule with most of them, and the few exceptions would have to be induced to make great sacrifices in order to lay the foundation for a healthy condition. The present condition of this industry, owing to the severe battle of competition, is a distressing one. The recent announcement of the liquidation of a stock company seems to be of little consequence; the retrogression of the whole industry and the hoped for improvement having been in vain, all the factories are insufficiently employed. Another unfavorable factor in this condition is the abnormal advance in prices of the raw material (the market prices of crude rubber having advanced within the past six months nearly 50 per cent. and more), and the factories are therefore compelled to sell at a loss, in order to keep employed. Even if the recent attempts to place the industry in a healthy condition give some hopes of a realization through the fact that a large banking institution has taken the initiative, much doubt of its success still prevails, owing to the difficulty of combining the varied interests."

THE DENTAL RUBBER BUSINESS.

CONDEMNED POSTOFFICE STORES.

NEW RAINPROOFING PROCESS.

"THE CURSE OF CENTRAL AFRICA."

A NEW TIRE FABRIC.

THE REVOLVING HEEL IN ENGLAND.

THE type of heel known as the "revolving," although the number of revolutions per minute is so few that no speed indicator yet known will register them, has caught the British fancy, and for these reasons: In the first place, the rubber heel certainly outwears the leather; then the Briton always comes down solidly on his heels when walking, and the elastic cushion eases the jar; and still further, the fact that when the outer edge of the heel is worn one can turn that part toward the instep and present a fresh surface for wear, appeals to him mightily.



QYAT.



WOOD-MILNE.

That the heel as a revolver first appeared in the United States but did not sell well, is strongly urged. The American, however, is thriftless as compared with his cousin across the Atlantic. He won't bother to turn a heel; that is, as a community he won't. Nor does he like the looks of a money saving device on a fine pair of shoes. But the more independent Briton would wear copper-toed shoes if it suited him and never give their appearance a thought.



PALATINE.

Nor does he have the objection to rubber heels in general that some Americans feel, in that when they walk into an office unannounced, the rubber heel making no sound, they startle the occupant by appearing at his elbow like a ghost or burglar, and thus embarrass themselves. The English office is so guarded that none enters except through the cooperation of the occupant.

And so the heel, the revolving heel, in many shapes, has caught on and is to be seen everywhere. The history of its growth is most interesting. It began back in 1896, when Mr. P. E. Roberts, of the Revolving Heel Co. (London), first put one on the market. He had his troubles in getting the right goods and in interesting the public, but finally success came.



HARBORO.



HUSHAPAD.



THE TRAMP.

His company to-day are said to be marketing over a million a month of them. The business of this one company is between \$400,000 and \$500,000 a year, so it is said, and there are others—many of them. For example there is Wood-Milne, the Palatine, the "Qyiat," the "Hushapad," the Harboro, the Tramp, and many others. Bear in mind that the above refers only to revolving rubber heels, and that there are just as many of the kind that cannot be turned after wear.

As for those who wear them, they are to be seen on the shoes of peers of the realm and on costers, on the boots of elegantly dressed ladies and on the substantial footwear of the charwoman—all of which indicates real merit.

THE OBITUARY RECORD.

LOUIS E. K. ROBSON, who died at Malden, Massachusetts, March 27, aged 51 years, had been since 1876 chief clerk of the Edgeworth factory of the Boston Rubber Shoe Co. He was born in Stoneham, Mass., being a son of the Rev. John Robson, a retired clergyman, at one time a partner of Mr. E. S. Converse in operating the old "Red Mills" in the manufacture of dye stuffs. Louis Robson was a master of arts of Tufts College, and spent four years after graduation in teaching. He served at one time on the Melrose school board, was something of a writer, and was active in the literary organizations maintained in his community. In 1893 he served as alderman in Malden. He was unmarried. A surviving brother is John Robson, formerly with the Boston Rubber Shoe Co., and now general superintendent of the Woonsocket Rubber Co.

RUDOLPH FISCHER, vice president of the St. Paul Rubber Co. (St. Paul, Minnesota), died on April 8, at Pasadena, California, of an illness from which he had suffered for more than two years. He was 36 years old and a native of St. Paul, being a son of the late Louis Fischer, an early settler. The St. Paul Rubber Co. was established in 1877, as the first rubber jobbing house in the northwest, west of Milwaukee. Later the firm became incorporated, with Albert Fischer, a brother of the deceased, as president—a position which he still holds—and Rudolph Fischer, vice president. The house did a jobbing business in rubber goods generally. The deceased is survived by a widow and three children.

THE Hon. Oliver S. Kelly, who died at Springfield, Ohio, on April 11, aged 79 years, was the father of Edwin S. Kelly, some time general manager of the Consolidated Rubber Tire Co. Their name is represented in the designation of the "Kelly-Springfield" tires. The deceased was interested largely in the manufacture of agricultural implements and steel products, and was active in business until within a few days of his death.

RUBBER UNDER THE RUSSIAN TARIFF.

THE new Russian customs tariff, confirmed by the Emperor on January 13, 1903, has not gone into effect, and no date has been fixed for its operation. The British board of trade, however, has prepared a translation of it, based upon which THE INDIA RUBBER WORLD has made a calculation of the rates, in American money, per 100 pounds avoirdupois, as follows:

| | New rate. | Old rate. |
|--|-----------|-----------|
| In sheets or threads, not combined with other materials.. | \$11.41 | \$ 9.41 |
| Manufactures (rubber in combination with other materials)..... | 17.12 | 15.98 |
| Hard rubber—unwrought..... | 11.41 | 9.41 |
| Hard rubber manufactures..... | 55.38 | 15.98 |
| Boots and shoes..... | 30.55 | 30.55 |
| Card clothing, with felt..... | 8.56 | 8.56 |
| Card clothing, without felt..... | 17.12 | 17.12 |

Tissues containing rubber threads or rubber in other forms are dutiable according to the material of chief value.

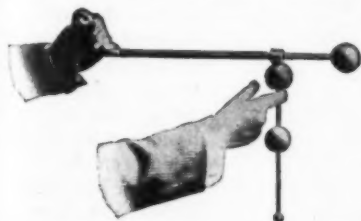
Crude India-rubber and Gutta-percha, including scrap, are now dutiable at about \$1.29 per 100 pounds; the new tariff provides for a rate of \$2.43.

The new tariff also provides for an export duty on "Caoutchouc waste" of 1½ rubles per Russian poud, equal to about \$2.43 per 100 pounds, to which THE INDIA RUBBER WORLD, has referred already [March 1, 1903—page 208.]

NEW GOODS AND SPECIALTIES IN RUBBER.

THE SNYDER HEALTH VIBRATOR.

THE value of a system of exercise and massage as a curative agent is now very widely recognized, but the most approved methods to date have involved the necessity of employing an adept *masseur*, owing to the difficulty of manual application on one's self. By means of a device invented by Lambert Snyder, and on which patents are pending,



it is claimed that individual application is practicable, and that the results are of the highest efficiency, while the cost of the apparatus is slight. The device is called the Portable Exhilarator. It consists of

a steel horizontal rod, crooked at one end to provide a convenient means of grasping it in one hand, and a dependent movable rod, attached to the other by means of a socket. Steady pressure of the operator's free hand, causing the dependent rod to move back and forth along the horizontal one, produces a vibratory effect which is conveyed to the system of the operator. This may be regulated in force by the rate of speed in using the device—varying from the most delicate vibrations to such strong effects as will affect the most robust constitution. The applications of rubber in this device are: (1) A covering of rubber for the crook, by which the device is gripped by the operator; (2) a ball at the other end of the rod, which, in some treatments, as for headache, is applied to the portion of the body to be treated, while the crook rests against a table or other firm object; (3) two balls on the suspended rod, by varying the position of which the force of the vibrations is controlled; and (4) a covering for the suspended rod, between said balls, to render it more agreeable to the hand of the operator. The rubber employed is referred to as being of the best quality, adding to the durability of the device. [The Lambert Snyder Co., No. 10 West Twenty-second street, New York.]

A NEW DOUBLE TUBE BICYCLE TIRE.

THE cut herewith illustrates a new double tube tire, the features of which are an extra heavy cover and especially heavy



tread. This tire is made under a patent granted September 15, 1903 (No. 739,053), which, with the method employed for coating the inner side of the cover, is designed to prevent any chafing of the inner tube. The inner tube is constructed with the "Continental" end, also protected by the patents of the

same company. The tire as illustrated is designed for bicycle use, and is one of an extensive line of bicycle tires now being produced by the Continental Rubber Works, Erie, Pennsylvania.

A RUBBER AUTOMOBILE VEIL.

THE article of ladies' wear for automobiling, illustrated herewith, is gathered around the top on a ribbon, which is tied un-



der the brim of the hat and is then thrown over it. It is absolutely waterproof and dustproof. It folds in a case the size of a ladies' pocketbook and can be carried without any inconvenience. It looks like a silk chiffon veil, and is just as light. These veils are particularly adapted for automobiling, driving, and stormy weather. It will fit over a hat of any size and will not harm the trimming. The demand for these veils is constantly increasing, as the ladies realize their many advantages. [Hill Brothers, wholesale agents for New York, Nos. 707-709 Broadway.]

DR. CRILE'S PNEUMATIC PRESSURE SUIT.

DR. GEORGE CRILE, of Baltimore, has done some exceedingly brilliant work in the way of controlling blood pressure in

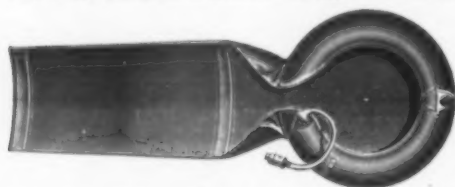


case of shock or collapse. A series of experiments on animals led this distinguished physician to doubt the efficacy of the stimulants in general use, and to come to the conclusion that failing blood pressure could be remedied by mechanical means alone. This resulted in the production of a rubber suit of great strength with which the patient to be treated was clothed and into which air could be pumped at pressures that were always under the control of the surgeon. The suit consists of a pair of trousers with feet, and a pair of sleeves with mittens. The suit is double lined with rubber both inside and out, and is both

strong and unstretchable. After the patient is placed in it and the sides laced up, the air pressure is applied between the two fabrics, an ordinary bicycle tire pump being used, until the proper pressure is reached. The suit has been found particularly useful in operations on the head and neck, particularly where the patient is forced to take a sitting posture. As in all important operations blood pressure is constantly and carefully noted, it is an exceedingly simple matter to regulate the pressure in the suit to fit the varying conditions that arise. After the operation the suit is often left on for some time, its deflation being accomplished as slowly as desired. [The B. F. Goodrich Co., Akron, Ohio.]

THREE "GLOVE COMPANY" NOVELTIES.

THE "Glove Company," as one of the best known rubber manufacturing concerns are familiarly known, have for years had a splendid reputation for excellence in manufacture. The great bulk of their goods, however, were fine footwear and equally fine clothing. But in the last few years, while still increasing notably in the lines mentioned, they have built up a very large business in general druggists' sundries, until to-day



that department alone would be considered enough of a business for many rubber manufacturers. This business has been secured by the production of good goods and new and useful novelties. For example the Hygeia Reversible Surgical Pads are a novelty, and one that appeals strongly to the operating surgeon. The cushion part of the pad is pneumatic, and the whole can be reversed by a turn of the wrist. This reversible feature makes the pad far more cleanly, useful, and durable. The drainage apron is arranged by an ingenious insertion of a strip of ductile metal in the lower border, by which it is curved to fit the contour desired. These pads are made of the special maroon rubber for which the company have a reputation. Two other novelties that the same house have lately put upon



the market are the "London" and the "Canteen" hotwater bottles. Both of these are made in maroon rubber. The "London," so called because its shape suggests the English type of bottle, has a round stiff handle, and is most convenient for filling and handling. The "Canteen" is a round bottle with the same kind of handle. [Goodyear's India Rubber Glove Manufacturing Co., New York.]

DARLINGTON DISHWASHER.

THE device illustrated herewith, which appears excellently adapted for its use, is composed wholly of rubber, with the exception of the bristles in the brush.



The head of the brush is made of rubber, perforated to allow the water to flow freely among the bristles, besides which the tubing employed is of course rubber, together with the connection, for the sink faucet. Its use is practicable wherever a force of water can be had, or a boiler is used. It is used practically without wetting the hands; it does not chip china or require a dish

cloth; it does away with dishpans and greasy water; it saves soap and hot water; it is adjustable to any faucet. [The Domestic Utilities Co., No. 54 West Twenty-second street, New York.]

THE "SUMMIT INVIGORATOR."

THIS is a new rubber bath brush, which is adapted also for massage and shampoo purposes. It is made with an opening for the thumb, as shown in the illustration, which prevents the brush from slipping off the hand, a source of complaint in regard to some other bath brushes. When the brush is to be used, the clasp is fastened, after which the brush is drawn on as if it were a glove; it is taken off the same way as a glove, without unfastening the clasp. It is designed to retail at 50 cents. [The Summit Rubber Co., Barberton, Ohio.]



RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MARCH 8, 1904.

- N**O. 753,920. Vehicle tire [pneumatic, with spongy cork protector sections]. M. V. Rush, Anderson, Ind.
- 753,955. Hoof pad. G. H. Clark, Boston, assignor of one half to E. C. Wright.
- 753,968. Device for applying liquids to the scalp [comb with perforated teeth and a collapsible bulb]. A. J. Farmer, Detroit, Mich.
- 754,000. Reservoir pen or the like. A. Munro, Stockport, England.
- 754,015. Device for storing and administering serums. F. G. Ryan, assignor to Parke, Davis & Co., Detroit, Mich.
- 754,078. Method of vulcanizing tires in continuous lengths. G. A. Ludington, assignor to Firestone Tire and Rubber Co., Akron, Ohio.
- 754,129. Pyrographic apparatus. A. S. Dietz, New York city, assignor to F. Tolhurst.
- 754,148. Hollow India-rubber article used as a toy. F. Kuhlemann, Budapest, Hungary.
- 754,186. Pump valve [consisting of a disk of soft rubber and a double cone thimble of metal set therein]. Otto Arendt, Newark, N. J.
- 754,217. Portable bath or sack for washing or bathing purposes. A. Herz, Vienna, Austria.
- 754,234. Dress shield. C. A. Pienkowsky, assignor to Anthony Shield Co., both of Chicago.
- 754,244. Vehicle wheel [with solid rubber tire]. G. W. Sanford, assignor of one third to James Gray, both of Thomaston, Conn.
- 754,276. Syringe. E. Bartsch, San Francisco.
- 754,386. Hernia truss. C. P. Norris, Chambersburg, Pa., assignor of one third to G. L. Snider.

Trade Mark.

- 42,222. Rubber nipples. Davidson Rubber Co., Boston, Mass. *Essential feature.*—The word "Nearnature." Used since Jan., 1903.

ISSUED MARCH 15, 1904.

- 754,416. Fountain pen. W. Bovill, Chicago.
- 754,645. Pneumatic tire. J. Dupont, West Derry, N. H.
- 754,648. Tire [pneumatic detachable, with square tread]. H. G. Fiske, assignor by mesne assignments, to Morton Trust Co., both of New York.
- 754,877. Dress Shield. J. H. Lee and N. B. Conkling, St. Louis.
- 754,947. Adjustable heel for shoes. A. Westwood, Oakland, Cal., assignor of one-half to I. Fiel.

ISSUED MARCH 22, 1904.

- 754,959. Covered elastic band. J. Ashworth and F. N. Ashworth, Somerville, Mass.
- 754,992. Exercising apparatus. C. A. Grabnerm, Warsaw, Ind.
- 754,988. Combined moistening and sealing device or the like [with rubber bulb]. L. Fritz and W. W. Dryden, assignor of one third to G. Schmidheiser, Philadelphia.
- 755,147. Vehicle tire [pneumatic detachable]. P. W. Litchfield, Akron, Ohio.
- 755,180. Wall packer for oil wells. H. Smith and W. Wright, Franklin, Pa.
- 755,259. Cushion tire. J. H. Toole, Chicago.
- 755,275. Bottle closure. F. W. H. Clay, Pittsburgh.
- 755,310. Protector for pneumatic tires. L. Nioré, Château-Renault, France.

755,325. Hose coupling. G. Soutar, East Pittsburgh, Pa.

ISSUED MARCH 29, 1904.

- 755,701. Hose nozzle. G. A. Anderson, Kansas City, Kas.
- 755,711. Tire for vehicle wheels [cushion]. W. H. Sewell, Belfast, Ireland.
- 755,712. Tire for vehicle wheels [cushion]. W. H. Sewell, Belfast, Ireland.
- 755,747. Bath tub. H. P. Colle, Knoxville, Tenn.
- 755,779. Elastic tread horseshoe. H. E. Irwin, Galesburg, Ill.
- 755,904. Beerwort distributor. R. Mally, Vienna, Austria.
- 755,984. Toy. I. D. Worcester, Pittsburgh.
- 755,995. Hose nozzle holder. C. F. Brown, Chattanooga, Tenn.
- 756,021. Storm shield for vehicles. M. R. Hull, assignor to Rex Buggy Co., both of Connerville, Ind.

- 756,076. Fountain pen filling device. H. Taylor, St. Paul, Minn.
- 756,103. Fountain brush. H. A. Doten, Burlington, Vt.
- 756,140. Hose lining. W. E. Reid and W. H. Lau, Detroit, Mich.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 3,402. D. Taylor, Brechin-Forfar, Scotland. Waterproof collar. Feb. 11.
- 3,417. A. Pretasch, London. Motor and cycle tires. Feb. 11.
- *3,458. Addressograph, Limited, London. Rubber type (The Addressograph Co., United States). Feb. 11.
- 3,498. P. M. Matthew and C. R. Crombie, Edinburgh. Manufacture of golf balls. Feb. 12.
- 3,501. T. Ford and T. Hill, Stoke-on-Trent. Means of securing detachable tires on wheels. Feb. 12.
- 3,505. L. Crosland and W. Crosland, Limited, Bredbury, Cheshire. Machinery for cutting or silting rubber. Feb. 12.
- 3,506. W. Bolles and J. L. Chase, Glasgow. Fountain pen. Feb. 12.
- 3,536. J. Rushworth, London. Cycle and vehicle tire. Feb. 12.
- 3,552. A. T. Collier, London. Elastic tire. Feb. 12.
- 3,600. J. J. Breuillard, London. Elastic heel piece for boot. Feb. 12.
- 3,670. The Hon. B. L. J. Tollemache, London. Means of inflating tires. Feb. 13.
- 3,671. Same. Improvement in tires. Feb. 13.
- 3,603. W. Bentley, Liverpool. Securing rubber tires to wheels. Feb. 13.
- 3,707. T. H. Slack, Alderley Edge. Revolving bootheel. Feb. 15.
- 3,842. T. W. Matthew, Edinburgh. Manufacture of revolving heel pads. Feb. 16.
- 3,907. S. G. Wimpfen, London. Protective device for pneumatic tires. Feb. 16.
- 3,946. T. J. F. Ryland, London. Plate for holding rubber on boot-heels. Feb. 17.
- 4,006. W. Nalkowsky and A. Fels, London. Movable heels for boots. Feb. 17.
- 4,017. J. R. Skinner, Liverpool. Cushion heel for boots. Feb. 17.
- 4,026. W. F. Williams, London. Elastic tire. Feb. 17.
- 4,039. G. Moore, Jr., Birmingham. Bicycle tire. Feb. 18.
- 4,132. E. Lee, London. Improvement in tires. Feb. 18.
- 4,197. A. V. Page. Animal douche. Feb. 19.
- 4,202. T. H. Read and F. Read, London. Tire remover for motor cars. Feb. 19.
- 4,203. Same. Tire remover for bicycles. Feb. 19.
- 4,223. V. Jetley, London. Tire for vehicles. Feb. 19.
- 4,354. L. Dewanne, London. Pneumatic shoe or boot. Feb. 22.
- 4,412. W. P. Thompson, London. Hose coupling. Feb. 22.
- 4,440. W. L. Jackson, Glasgow. Method and means of securing rubber tires to rims. Feb. 23.
- 4,456. J. D. Roots, London. Pneumatic tire. Feb. 23.
- 4,547. Jane Eddie, Accrington. Elastic wristlet for infants. Feb. 24.
- 4,605. L. A. Dussek, London. Manufacture of golf balls. Feb. 24.
- 4,616. F. Rich, Crawley, Sussex. Inner tube for tires. Feb. 25.
- 4,623. A. Van der Stichlen, Manchester. Flexible tires for vehicles. Feb. 25.
- 4,639. G. A. Strutt, Derby. Tire and wheel for motors. Feb. 25.
- 4,680. L. Azulay, London. Pneumatic tire. Feb. 25.
- 4,744. A. G. Rosser, London. Non-skidding device for tires. Feb. 26.
- 4,806. T. Brown, J. Brown, and C. Smith, Sheffield. Revolving heel pad. Feb. 27.
- 4,899. W. L. Webster and C. J. Rhoades, London. Heel pad. Feb. 27.
- 4,911. A. Munro, Wrexham. Reservoir pen. Feb. 29.
- 4,921. T. D. Norgate, Southsea. Rubber heel and sole. Feb. 29.
- 4,960. R. Appleyard, London. Golf ball. Feb. 29.
- 4,972. A. E. Duquesne and L. L. Dockes, London. Toy comprising a plurality of dilatable chambers. Feb. 29.
- 5,014. M. Miller and J. A. Bunnell, London. Armor for pneumatic tires. Feb. 29.
- 5,063. T. T. Spencer, London. Heel protector for boots. Mar. 1.
- 5,196. W. M. Maynard, London. Golf ball. Mar. 2.

- 5,345. J. Hardie and F. H. Cooper, London. Protected device for pneumatic tires. Mar. 4.
 5,416. W. Rowbotham and W. A. Tamp, Birmingham. Rubber tire. Mar. 5.
 5,425. I. Frankenburg & Sons, Limited, and I. Frankenburg, Manchester. Heel pad. Mar. 5.
 5,433. J. Thornhill, Pemberton. Prevention of loss of air from pneumatic tires. Mar. 5.
 5,483. J. S. Smith, London. Pneumatic tire. Mar. 5.
 5,615. F. Schmidt and C. Sharp, Southampton. Air tube protector for pneumatic tires. Mar. 8.
 5,686. F. H. Richardson, London. Anti-puncturing device for tires. Mar. 8.
 5,764. E. Ayres, London. Boot protector. Mar. 9.
 5,822. J. H. Barry and W. J. Hunter, London. Detachable rim for pneumatic and other rubber tires. Mar. 9.
 5,827. N. Korth, London. Manufacture of tire covers. Mar. 9.
 5,830. E. C. F. Otto, London. Resilient wheel. Mar. 9.
 5,833. Bewley & Draper, Limited, and H. C. Draper, London. Combined ink reservoir and fountain pen filler. Mar. 9.
 5,858. T. Dowler, Manchester. Inflatable rubber toy. Mar. 10.
 5,891. A. H. Edwards, London. Means for automatically inflating pneumatic tires. Mar. 10.
 5,954. T. Hacking, Manchester. Water bottle. Mar. 11.
 5,973. J. Ferrier, Northampton. Means of attaching rotary boot heel. Mar. 11.
 6,047. E. Deitz and J. Quesnel, London. Pneumatic tire. Mar. 11.
 6,082. J. Birtwistle, Manchester. Pneumatic tire. Mar. 12.
 6,085. F. L. Bennett, Manchester. Pneumatic tire. Mar. 12.
 6,172. W. H. Southon and H. Southon, London. Golf ball. Mar. 14.
 6,194. Evelyn de la Rue, London. Fountain pen. Mar. 14.
 6,224. G. Dumond, London. Non-slipping device for pneumatic tires. Mar. 14.
 6,246. F. Shaw, Durham. Non-skidding device for pneumatic tires. Mar. 15.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 2, 1904.]

- 23,330 (1902). Heel and sole protector. T. F. and H. Atkinson, Birmingham.
 23,433 (1902). Boot heel and sole. B. Nelson, Durham.
 *23,571 (1902). Dress shield. G. Harrison, London. (G. M. Grant and others, Chicago, United States.)
 *23,637 (1902). Pneumatic tire. G. H. Clark, Boston, Massachusetts.
 23,671 (1902). Pneumatic tire. H. Parsons, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 9, 1904.]

- 23,707 (1902). Pneumatic tire. N. Wood, Manchester.
 23,806 (1902). Stuffing box packing [asbestos and rubber]. A. C. Roberts, Leeds.
 *24,097 (1902). Ventilated boot heel. J. Kennady, Boston, Massachusetts.
 24,231 (1902). Solid rubber tire. H. Falconnnet, Choisy-le-Roy (Seine), France.
 24,232 (1902). Golf ball [rubber cored]. T. C. Crawford, London.
 24,243 (1902). Hot air and vapor bath. J. Valcke, Courtrai, Belgium.
 24,267 (1902). Heel protector. B. L. Freeman, Newcastle-upon-Tyne.
 24,314 (1902). Heel and sole protector. E. B. Tyler, Glasgow.
 24,327 (1902). Hoof pad. J. S. Campbell, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 16, 1904.]

- 24,460 (1902). Portable bath. A. Herz, Vienna, Austria.
 24,494 (1902). Pneumatic tire. C. Challiner, Manchester.
 24,534 (1902). Golf ball. W. Wood, Mitcham, Surrey.
 24,573 (1902). Waterproof cloth. E. Frankenberg, Hanover, Germany.
 24,574 (1902). Machine for waterproofing fabrics. Same.
 24,612 (1902). Respirator [for use by firemen]. M. Longden, Dawson, Canada.
 24,621 (1902). Surgical truss. C. A. Deltret-Claverte, Paris.
 24,739 (1902). Solid rubber tire. H. Falconnnet, Choisy-le-Roy (Seine), France.
 *24,758 (1902). Solid rubber tire. G. B. Dryden, Chicago, Illinois.
 24,847 (1902). Vulcanizing apparatus. F. Knoefel, London.
 24,918 (1902). Horseshoe pad. R. and R. H. Burgess, Hyde, Cheshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 23, 1904.]

- 25,044 (1902). Utilization of waste rubber. A. Theilgaard, Copenhagen, Denmark.
 25,067 (1902). Stethoscope. W. J. Penfold, Newcastle-upon-Tyne.
 25,186 (1902). Solid tire. M. Montgomery, Ballymena, County Antrim.
 25,304 (1902). Puncture proof fabric for pneumatic tires. W. C. Peters and W. Bellamy, Ely, Cambridgeshire.
 25,374 (1902). Non-slipping pneumatic tire. W. D. Sainsbury, Dublin.
 25,472 (1902). Pneumatic tire. S. T. Richardson and R. Price, Birmingham.
 25,485 (1902). Pneumatic tire cover of rubber and asbestos. G. Boardman, Gosforth.
 25,510 (1902). Fountain pen. J. A. O. Cole, Lagos, West Africa.
 25,573 (1902). Screw stopper for hot water bottles. A. J. Purser, Birmingham.
 25,655 (1902). Heel pad of leather and rubber. L. Eckhard, Bad-Homburg, Germany.
 25,673 (1902). Vaporizer for anesthetics. J. Lobjois, London.
 25,730 (1902). Pneumatic tire. A. LePlay, Paris.
 25,765 (1902). Heel protector. H. A. Wallace, Southwick, and J. Smith, Brighton.
 25,781 (1902). Hand Stamp. A. C. Kley, Liverpool.
 25,810 (1902). Solid tire. A. Hopton, London.

GERMAN EMPIRE.

PATENTS GRANTED.

- 150,417 (Class 39a). Protective casings for use in cold vulcanizing technical rubber goods. E. Frankenberg, Hannover. Feb. 24.
 150,787 (Cl. 63c). Elastic tires. E. Ohm, Duluth. Mar. 9.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 217,411 (Class 63c). Rubber tire filled with small hollow balls. F. Müller, Sorau. Feb. 24.
 217,736 (Cl. 63c). Serrated rubber protecting tread for tires. Asbest u. Gummiwerke, Alfred Calmon, A.-G., Hamburg. Feb. 24.
 217,608 (Cl. 69). Adjustable hard rubber safety comb for razors. A. Müller, Merscheid-Solingen. Feb. 24.
 218,123 (Cl. 30d). Hollow ball with mouthpiece for inflating it. Dr. J. H. Lubinus, Kiel. Mar. 2.
 217,961 (Cl. 33d). Appliance for retaining handkerchiefs and gloves in the pocket, being a rubber retainer provided with a slit-like opening. A. Schocher, Leipzig. Mar. 2.
 218,645 (Cl. 63c). Elastic tire. A. Burck, Darmstadt. Mar. 9.
 218,737 (Cl. 63c). Repair patches for tire punctures. L. Peter, Frankfurt a/M. Mar. 9.
 218,256 (Cl. 64d). Hard rubber saucer for beer glasses, with soft rubber ring underneath to deaden the noise on the table. W. Tautenhahn, Eibenstock. Mar. 9.

APPLICATIONS.

- 20,521. Nipple for nursing bottle. W. F. Ware, Philadelphia, United States. Mar. 9.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

- 336,777 (Nov. 18, 1903). Richardson and Price. Pneumatic tire.
 336,799 (Nov. 19, 1903). Bondis. Non slipping pneumatic tire.
 336,704 (Oct. 27, 1903). Ernoul Taffin. Reinforced rubber.
 336,787 (Nov. 19, 1903). Deitz and Quesnel. Anti slipping motor tire.
 336,839 (Oct. 29, 1903). Grosselin. Juxtaposed wheel tires for motors.
 337,018 (Nov. 26, 1903). E. H. Seddon. Pneumatic tire.
 337,026 (Nov. 26, 1903). De Saint-Seine and de Montureux. Anti slipping rubber tire.
 337,051 (Nov. 28, 1903). Aldrich and Ryan. Device and process for the extraction of India-rubber without solvents.
 337,209 (Oct. 20, 1903). Société anonyme La Locomotion Moderne. Waterproof and airproof tubular tire.
 337,300 (Oct. 20, 1903). Société anonyme La Locomotion Moderne. Detachable protective felloe for pneumatics.
 337,321 (Nov. 4, 1903). Lebeau, Archambault and Comte. Elastic tire.
 337,295 (Aug. 25, 1903). Cummings. Pneumatic automobile tire.
 337,386 (Nov. 24, 1903). Schurr. Pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

RUBBER GOODS MANUFACTURING CO.

THE fifth annual meeting of the shareholders of the Rubber Goods Manufacturing Co., incorporated under the laws of New Jersey, was held on April 14, at the registered offices of the company in that state, in Jersey City. The annual report of the president, Charles H. Dale, presented in printed form and read at the meeting, follows in full:

"In connection with the statement of the auditors for the year ending March 31, 1904, I wish to draw attention to the fact that while business was good during the first half of the year 1903, the general depression in trade throughout the entire country commencing in August, 1903, has been keenly felt by the rubber industry. Notwithstanding this, the sales for the year show an increase over preceding years.

"In considering the percentage of profit, it must be borne in mind that although the percentage is slightly lower than last year, this is in face of the enormous increase in the cost of crude material—notably rubber and cotton.

"The closest attention has been paid to the maintenance of the plants, the sum of \$209,644.73 having been expended during the past year for this purpose as against \$149,576.65 for the previous year; so that it is fair to say that all the properties are to-day practically as good as new.

"Finally, where an appraisal of quantities and values has been necessary, as in stock on hand and accounts and bills receivable, it has been made on a most conservative basis; and I can personally guarantee that the appraisals, both as to quantities and value, are in every instance under, rather than over true values."

The customary annual business reports were presented, accompanied by a certificate by the company's auditors, Messrs. Bragg & Marin, certified public accountants, and the whole approved.

THE NEW DIRECTORATE.

THE annual election for directors resulted in the choice of the following, the first nine named being reelected:

CHARLES H. DALE, No. 16 Murray street, New York.
ERNEST HOPKINSON, No. 253 Broadway, New York.
TALBOT J. TAYLOR, No. 30 Broad street, New York.
HARRY KEENE, No. 253 Broadway, New York.
CHARLES A. HUNTER, New Durham, New Jersey.
FRANK W. EDDY, Detroit, Michigan.
EDWARD LAUTERBACH, No. 22 William street, New York.
ARTHUR L. KELLEY, Providence, Rhode Island.
WILLIAM T. COLE, No. 68 Murray street, New York.
HOWARD O. SMITH, president Indianapolis Rubber Co., Indianapolis, Indiana.

BALANCE SHEET.

[In the report as presented, all statements referred only to the last business year. But for convenience of comparison, the corresponding figures for the three previous years are here included, as shown in the respective annual reports. For earlier figures, reference is made to THE INDIA RUBBER WORLD of May 1, 1903—page 262.]

| ASSETS. | | | | |
|--|-----------------|-----------------|-----------------|-----------------|
| | Mar. 31, 1904. | Mar. 31, 1903. | Dec. 31, 1901. | Feb. 1, 1901. |
| Cash..... | \$305,848.98 | \$ 56,619.36 | \$ 74,323.07 | \$25,746.12 |
| Mortgage notes (for property sold)..... | 31,000.00 | 31,000.00 | 15,000.00 | ..... |
| Accounts receivable .. | 3,920.68 | 205,537.13 | 876,856.83 | 45,585.19 |
| Treasury stock at cost..... | ..... | ..... | 292,443.00 | ..... |
| Plants owned ..... | ..... | 120,000.00 | ..... | ..... |
| Office furniture and fixtures owned..... | 3,547.08 | 1,026.80 | 110,856.05 | ..... |
| Net earnings of properties less amount received to date..... | ..... | ..... | ..... | 1,271,783.77 |
| Investments, Stocks of allied companies. | 25,015,279.69 | 24,808,279.69 | 24,928,646.83 | 25,141,149.09 |
| Total..... | \$25,359,596.43 | \$25,222,462.98 | \$26,298,125.78 | \$26,884,264.47 |
| LIABILITIES. | | | | |
| | Mar. 31, 1904. | Mar. 31, 1903. | Dec. 31, 1901. | Feb. 1, 1901. |
| Bills payable (for money borrowed).... | \$ | \$ | \$ 450,000.00 | \$ |
| Accounts payable, to allied companies.. | ..... | ..... | 597,326.42 | ..... |
| Accounts payable, to others..... | 5,651.67 | ..... | 53,657.44 | ..... |
| Deposits by companies..... | ..... | ..... | ..... | 405,317.33 |
| Preferred stock..... | 8,051,400.00 | 8,051,400.00 | 8,051,400.00 | 8,051,400.00 |
| Common stock | 16,941,700.00 | 16,941,700.00 | 16,941,700.00 | 16,941,700.00 |
| Total..... | \$24,998,751.67 | \$24,993,100.00 | \$26,094,083.86 | \$25,398,417.33 |
| SURPLUS..... | \$360,844.76 | \$229,362.98 | \$204,041.92 | \$1,485,847.14 |

CHARLES J. BUTLER, manager Morgan & Wright, Chicago, Illinois.
WILLIAM SEWARD, JR., treasurer Hartford Rubber Works Co., Hartford, Connecticut.

E. J. COUGHLIN, general factory manager, Mechanical Rubber Co.
W. J. COURTNEY, railroad manager Peerless Rubber Manufacturing Co.

JOHN H. COBB, general manager the New York Belting and Packing Co., Limited.

The retiring directors were Middleton S. Burrill, Henry Steers (deceased), Henry R. Wilkening, James B. Taylor, Lewis D. Parker, and H. Carroll Winchester.

The new executive committee consists of Messrs. Dale, Hopkinson, Keene, Taylor, Hunter, Seward, and Coughlin.

At a meeting of the reorganized board the following were elected officers for one year:

President and Chairman Executive Committee—CHARLES H. DALE.
Vice Presidents—ERNEST HOPKINSON, TALBOT J. TAYLOR, and CHARLES A. HUNTER.

Secretary and Treasurer—HARRY KEENE.

Assistant Secretary and Treasurer—JAMES MCGUFFOG.

The company's sales for 1903 were reported at \$14,310,752. In preceding years they had been: \$13,999,329 in 1902; \$14,348,048 in 1901; \$13,364,090 in 1900.—The year's earnings amount to nearly 14 per cent. on the business of \$14,000,000.

INCOMES AND DISBURSEMENTS.

FOR YEAR ENDING MARCH 31, 1904.

| | |
|---|----------------|
| Balance brought over from 1903..... | \$ 229,362.98 |
| Income from dividends declared by allied companies for year..... | 880,468.72 |
| Interest account—excess of receipts over payments for year..... | 5,584.04 |
| Total..... | \$1,115,415.74 |
| Expenses paid for year..... | \$103,701.60 |
| Charged off, loss on properties, contracts, guarantees, and for depreciation..... | 87,271.38 |
| Total expenses, etc..... | 190,972.98 |
| Net income..... | \$924,442.76 |
| Four dividends paid to March 31, 1904, preferred..... | 563,598.00 |
| Balance, surplus | \$360,844.76 |

EARNINGS OF CONSTITUENT COMPANIES FOR 1903 AND DISPOSITION.

| | |
|--|----------------|
| Net unapplied earnings, as per previous report..... | \$ 492,208.48 |
| Earnings of the companies for the year..... | \$2,133,787.56 |
| Charged off for maintenance and repair | 209,644.73 |
| Net profit for 1903..... | \$1,924,142.83 |
| From the above there has been set aside for sinking fund: | |
| For bonds..... | \$ 56,477.65 |
| For additions to plants | 260,280.93 |
| For depreciation..... | 295,565.05 |
| | 612,323.63 |
| Leaving a balance of..... | 1,311,819.20 |
| Making a total of | \$1,804,027.68 |
| Out of which dividends have been declared for the year ending March 31, 1904..... | 938,860.72 |
| Net unapplied earnings of allied companies..... | \$865,166.96 |
| Less amount owned by stockholders other than the Rubber Goods Mfg. Co..... | 47,612.64 |
| Net unapplied earnings belonging to the Rubber Goods Mfg. Co..... | \$817,554.32 |
| Of the above dividends..... | \$938,860.72 |
| There was paid to stockholders other than the Rubber Goods Mfg. Co..... | 58,392.00 |
| Dividends paid to Rubber Goods Mfg. Co..... | \$880,468.72 |

The figures given in the preceding column are compared below with the corresponding details in the former four annual reports of the company:

RUBBER GOODS MANUFACTURING CO.

Income from dividends declared by constituent companies:

| | |
|--|---------------|
| 1899..... | \$ 644,624.83 |
| 1900..... | 1,301,609.73 |
| 1901..... | 1,362,824.00 |
| 1902 (to March 31, 1903)..... | 1,570,402.64 |
| 1903 (to March 31, 1904)..... | 880,468.72 |
| Interest account: | |
| 1899—Excess of receipts..... | \$37,880.11 |
| 1900—Excess of receipts..... | 25,561.80 |
| 1901—Excess of payments..... | 22,556.81 |
| 1902 (15 mos.)—Excess of payments..... | 47,482.77 |
| 1903—Excess of receipts..... | 5,584.04 |

EARNINGS OF CONSTITUENT COMPANIES.

| | |
|-----------------------------|----------------|
| * Gross earnings, 1899..... | \$1,652,901.09 |
| Do 1900..... | 2,083,049.75 |
| Do 1901..... | 1,898,964.50 |
| Do 1902..... | 2,103,377.80 |
| Do 1903..... | 2,133,787.56 |
| | \$9,872,080.70 |

Charged for depreciation of plants:

| | |
|-----------|----------------|
| 1899..... | \$ 25,842.85 |
| 1900..... | 198,921.78 |
| 1901..... | 201,910.78 |
| 1902..... | 536,253.63 |
| 1903..... | 295,565.05 |
| | \$1,258,494.09 |

† Charged off for sinking fund:

| | |
|-----------|----------------|
| 1899..... | \$ 45,449.05 |
| 1900..... | 50,737.99 |
| 1901..... | 50,467.59 |
| 1902..... | 50,209.24 |
| 1903..... | 56,477.65 |
| | 253,341.92 |
| | \$1,511,836.01 |

| | |
|--|----------------|
| Net earnings for five years..... | \$8,360,244.69 |
| From which has been appropriated for additions to plants | 1,053,447.21 |

| | |
|--|----------------|
| Leaving a balance of..... | \$7,306,797.48 |
| Out of which dividends have been declared: | |
| 1899..... | \$ 769,624.83 |
| 1900..... | 1,434,693.73 |
| 1901..... | 1,469,948.00 |
| 1902 (to March 31, 1903)..... | 1,678,723.64 |
| 1903 (to March 31, 1904)..... | 938,860.72 |
| | 6,291,850.92 |
| | \$1,014,946.56 |

* After deducting cost of repairs and maintenance of plants. † For bonds of New York Belting and Packing Co., Limited, and Mechanical Rubber Co.]

[The figures at the foot of the preceding column are subject to certain deductions under a variety of headings, including losses of allied companies taken over at various times and charged to the Home office. The result is to leave the net unapplied earnings at the end of the past year as follows:]

| | |
|---|--------------|
| Net unapplied earnings..... | \$865,166.96 |
| Less amount owned by stockholders other than the Rubber Goods Mfg. Co..... | 47,612.64 |
| Net unapplied earnings belonging to the Rubber Goods Mfg. Co..... | \$817,554.32 |

THE TEXTILE GOODS MARKET.

THE gradual decline in the price of staple cotton has had a tendency to maintain the sluggishness in the market for fabrics. Consumers of cloth naturally looked for a corresponding shading of prices for manufactured products, but the firmness of the manufacturers and commission houses has prevented anything like large transactions during the month. Despite the skill of experts in forecasting the new crop, nothing accurate has been brought forth.

Spinners are not taking only such quantities as is necessary to complete contracts in hand, and as there is curtailment going on in all parts of the country, it is not likely that the price of cotton will advance above the current figure before the new crop materializes. Prices of cotton middling upland spots:

| | New York. | New Orleans. | Liverpool. |
|---------------|---------------------------------------|---------------------------------------|------------|
| April 6..... | 15 cents. | 15 cents. | 8.50d. |
| April 13..... | 14.40 cents. | 14 ¹ / ₈ cents. | 8.24d. |
| April 20..... | 14.10 cents. | 14 ¹ / ₂ cents. | 7.92d. |
| April 27..... | 13 ³ / ₄ cents. | 13 ³ / ₄ cents. | 7.58d. |

The cotton duck situation has not changed appreciably since last writing. Most mills are working on short time, (1) to make their stocks of staple carry them through to the end of the season, and (2) on account of their ability to meet the passing demand by so doing. Some bitter comment has been indulged in on the part of rubber manufacturers, on account of the unsatisfactory way goods are being delivered, but upon investigation it has resulted in placing the fault upon the transportation companies. Canadian manufacturers, whose goods were shipped nearly three months ago, are still handicapped because of their non-arrival. Requisitions have been coming to the mills for goods that are due the rubber manufacturers somewhat faster than last month, but new business is not developing to suit the duck mills. Despite the decline in cotton there has been absolutely no weakness manifested by the duck manufacturers. In fact, it is said that the highest price asked during the season has been obtained this week for a quantity of duck. This means that some rubber concern has paid higher than 26 cents for goods.

April has not been over prolific of orders for sheetings, and the market for this class of textiles is about where we left it last month. The market, however, can hardly be said to be as firm as at that time, selling agents being somewhat easier to deal with, though prices have not been altered. Buying has been of a hand to mouth character, consumers hoping to see a decline commensurate with the drop in raw material.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

| Sheetings. | | |
|---------------------|----------------------------------|---|
| 40" Highgate..... | 6 ³ / ₄ c. | 40" Selkirk... 8 ¹ / ₂ c. |
| 40" Hightown..... | 7 c. | 40" Sellow... 8 ¹ / ₄ c. |
| 40" Hobart..... | 7 ¹ / ₄ c. | 48" Mohawk... 11 c. |
| 40" Kingstons..... | 8 c. | 40" Marcus... 6 ¹ / ₂ c. |
| 39" Stonyhurst..... | 6 c. | 40" Mallory.... 6 c. |
| 39" Sorosis..... | 5 ¹ / ₄ c. | 36" Capstans... 4 ¹ / ₂ c. |
| 40" Seefeld..... | 9 ¹ / ₄ c. | Osaburgs. |
| | | 40" Iroquois.... 10 c. |
| | | 40" 10 oz. Carew. 13 ¹ / ₂ c. |
| | | 40" 11 oz. Carita. 15 c. |

NEWS OF THE AMERICAN RUBBER TRADE.

THE FALCON RUBBER CO. (NEW HAVEN, CONN.)

THIS new company has acquired title to the B. Manville carriage factory, at Wooster and Wallace streets, New Haven, which is being remodelled to suit the requirements of their business. The property has a frontage of 148 feet on both streets. The main factory is a large five-story brick structure, and several adjoining buildings will be used as well. The location is regarded as particularly advantageous, being in close proximity to the steamboat and railroads. Orders have been placed for machinery, and it is expected that the factory will be in operation before another month. Druggists' sundries will be made. [See THE INDIA RUBBER WORLD, April 1, 1904—page 250.]

QUAKER CITY RUBBER CO. TO BUILD.

THE Quaker City Rubber Co.—Charles A. Daniel, proprietor (Philadelphia) has taken title to a tract of land in the northwestern section of that city, extending to the Delaware river, on which will be erected a mechanical goods factory, for which plans have been drawn. Mr. W. R. Blowers has been engaged as superintendent of the factory.

UNITED STATES RUBBER CO.—ANNUAL MEETING.

THE twelfth annual meeting of the shareholders, for the election of directors and for the transaction of any other business which may properly be brought before the meeting, will be held at the office of the company in New Brunswick, New Jersey, on Tuesday, May 17, at 12 o'clock, noon. The transfer books were closed on April 23, and will reopen on May 18 at 10 A. M.

NATIONAL INDIA RUBBER CO.

THE New York offices of this company have been removed to No. 42 Broadway, together with the general offices of the United States Rubber Co., through whom the rubber shoe products of the company are marketed. The other departments of the company's production are represented in the New York office as follows: Rubber-insulated wires and cables, by Henry D. Stanley; hose, belting, and packing, Albert B. Pratt; druggists' sundries, Henry D. Archer.

ANNUAL MEETINGS AT EASTHAMPTON.

AT the annual meeting of the Glendale Elastic Fabrics Co. (Easthampton, Massachusetts), on March 26, it was voted to confirm the action of the directors in purchasing the plant of the American Tubing and Webbing Co., at Providence, in December last. The board was reelected, as follows: William G. Bassett (president), Joseph W. Green, Jr. (treasurer and clerk), George A. Alden, Harry E. Converse, William Rapp.—At the annual meeting of the Nashawannuck Manufacturing Co., on the same date, the board was reelected, as follows: F. L. Hine of New York (president), George B. Noble of Easthampton (treasurer), James B. Ford of New York, J. D. Sofford of Springfield, Samuel E. Allen of Boston, Joseph W. Green, Jr. of Easthampton.

THE CROCKER RUBBER CO. (BROCKTON, MASS.)

A RETAIL rubber goods store has been opened at No. 139 Main street, Brockton, Massachusetts, by the Crocker Rubber Co., incorporated, of which George I. Crocker is president and manager, Isaac Crocker (Providence, R. I.) treasurer, and Fred. A. Jewell (Lawrence, Mass.) secretary. The store is an attractive one, supplied with a full line, and is the first in Plymouth

county. At the formal opening of the store, on March 26, including a concert, there was a large attendance.—Mr. Isaac Crocker, above named, is also treasurer, as well as president, of the Hope Rubber Co. (Providence, R. I.), Lawrence Rubber Co. (Lawrence, Mass.), and the Lowell (Mass.) Rubber Co.—three prosperous retail rubber goods stores.

NORTH AMERICAN RUBBER CO. IN BANKRUPTCY.

ON April 9 petition in bankruptcy was filed against this company in the United States district court at New York, by Seton Gordon, representing sundry creditors. It is alleged that the company is insolvent, and that it allowed the Manufactured Rubber Co., a creditor, to obtain a preference by a judgment, in which a sale of the assets was made by a city marshal on April 7. The company was originally the American Rubberine Co., incorporated in Delaware, October 13, 1899, the later name being adopted in April, 1900. The product of the company was a composition for the rubber manufacture, called "Rubberine," besides which the company made rubber heels and other mold work, having a factory at Jersey City, New Jersey. The company's office recently was at No. 171 Broadway, New York. Albert G. Voight was president and manager. On April 16 Archibald Douglas was appointed receiver of the company, by Judge Holt, in the United States district court. It is reported that a plan of reorganization is now being discussed. General Daniel E. Sickles, of New York, is reported to be the largest creditor of the company.

THE VOORHEES RUBBER FACTORY.

THE completed factory of the Voorhees Rubber Manufacturing Co. (Jersey City, New Jersey), is one of the most practical of rubber mills in that it is arranged and equipped to produce a very large amount of work. The factory is 285 feet long, of brick, a part of it two stories in height, and the remainder four stories. The machinery equipment is as follows: 20 mixing mills, two of which are of the Jumbo type; 5 calenders, one a four roll machine; 3 large belt presses; 8 vulcanizers, the whole being operated by three engines, two of 250 HP. each, and one auxiliary of 100 HP. In addition there are many labor saving machines and devices of merit, for special work, which are individual to this factory.



THE VOORHEES RUBBER FACTORY.

UNITED STATES RUBBER CO. RESUME DIVIDENDS.

THE board of directors, at their meeting on April 21, declared a dividend of $1\frac{1}{4}$ per cent. on the preferred shares of the company, from the net earnings for the fiscal year ending March 31, 1904, to holders of record at 3 P. M., May 31, payable June 15. This is the first dividend paid by the company since January 31, 1901. Dividends were paid regularly on the preferred shares from the organization of the company, at the rate of 8 per cent. per annum, up to October 31, 1900. The next succeeding payment—in the January following—of 1 per cent. was described as "the second quarterly dividend from the net earnings for the fiscal year," after which no further payments were made. The last dividend on the common shares was paid April 30, 1900.—The dividend now announced will require \$352,882.50.

WATERPROOF CLOTHING TRADE IN CANADA.

WHILE the amount of waterproof and rainproof clothing manufactured in Canada is increasing each year [says the *Toronto Clothier and Haberdasher*] the demand is also increasing, at a tremendous rate, so that the fact that there has been a rapid growth in imports during the last six years does not in any way reflect upon the enterprise of Canadian manufacturers or the merit of their product.

EDWARD G. MILLBURY CO. IN BANKRUPTCY.

SCHEDULES in bankruptcy of the Edward G. Millbury Co., dealers in oiled and rubber clothing, formerly at No. 38 White street, New York, show liabilities of \$12,822 and assets \$8839, consisting of outstanding accounts \$5062, and cash \$3777 in a trust company to the credit of Edward G. Millbury, receiver. The largest creditors are H. M. Sawyer & Son, of East Cambridge, Mass., \$3041, and Effie J. M. Marsh, of Brooklyn, \$5225. Edward G. Millbury was appointed permanent receiver in May, 1903, in proceedings for voluntary dissolution. He was appointed temporary receiver, September 9, 1902, when the liabilities was stated at \$12,064 and the nominal assets \$15,242.

THE B. F. STURTEVANT CO.'S NEW PLANT.

SINCE the removal of the foundry and pattern departments from the B. F. Sturtevant Co.'s plant at Jamaica Plain to its extensive new quarters at Hyde Park, Massachusetts, the moving of the other departments has progressed in earnest. The fan, heater, and electrical departments have already been moved, and the engine and galvanized iron department are in the process of removal and the erection of the machines in the machine shop is well under way. These machines, as well as all the others throughout the works, will be of the most modern and improved type and with the systems of cranes and industrial railways will enable the work to be turned out accurately, rapidly and at a minimum cost. The handsome office building is rounding into shape. The standing finish, quartered oak on the first and second floors and plain oak on the third and fourth floors, is completed and the walls and ceilings are being tinted. The headquarters are still at Jamaica Plain, but in a few months the entire plant will be moved.

THE RUBBER GOODS TRADE IN CHICAGO.

OUR correspondent reports: "Local shoe jobbers are having a breathing spell, now that the weather has become settled, and the tire men and mechanical rubber goods manufacturers' agents are becoming busy. The automobile season is on in full blast, making a good demand for tires. The footwear men, while admitting that the trade is a little quiet—more so than at this period of last year—assert that they have had such a heavy season that a lull should not be complained of. It is generally believed that western retailers and jobbers have taken advantage of their opportunity and have placed their orders so as to get in before the advance in prices which were expected. Others, who were late, are preparing to get in ahead of the advance expected June 1."

AMERICAN PNEUMATIC HORSE COLLAR CO.

A JUDGMENT for \$9298 was entered on April 6 against the American Pneumatic Horse Collar Co., in favor of the City Bank of Battle Creek, Michigan, on a note for \$9000 due four months from September 8, 1903, and unpaid. The summons was served on Dee Allen, president of the company, at No. 25 Broad street, New York, who had been a resident of Battle Creek. The company was incorporated in New Jersey, June 14, 1901, with \$2,000,000 capital authorized.

INTERIOR OF THE HODGMAN RUBBER STORE.

THE illustration gives a view of the interior of the handsome store of the Hodgman Rubber Co. (New York), as seen from the front—Nos. 806-808 Broadway—and extending back to Fourth avenue. A single photographic view does not do full justice to so spacious a storeroom, or give an adequate idea of the number and extent of handsome showcases used in displaying the large line of goods marketed by this company. In addition to the store being so spacious, it is exceptionally well lighted, having the advantage of a row of windows on the right, overlooking the grounds attached to Grace church. Toward the rear, on the left of the storeroom, are the entrances to the offices of the company, which are not only extensive and well arranged, but are also excellently lighted by means of a very large court area in the middle of the block. There are further large accommodations in a basement having the same floor area as the store, and also a sub basement practically of the same extent.



INTERIOR OF STORE—HODGMAN RUBBER CO. (NEW YORK.)

THE COMBINATION RUBBER AND BELTING CO.

THE trustee of this company, in bankruptcy, having applied (in the United States district court in New Jersey) for advice regarding the continuance by him of the business of said company, notice was given to all persons in interest that the matter would be heard before the referee in bankruptcy at Newark, New Jersey, on April 30, at 10 A. M.

FIRST RUBBER CO. (CHICAGO).

THE First Rubber Co. (Chicago), the charter of which was issued by the secretary of state of Illinois on April 18, with an authorized capital of \$50,000, was organized to take over the assets and business of the Western Rubber Manufacturing Co. and the Western Horse Pad Co., both of Chicago. The first of the two companies has been marketing rubber heels and other molded goods, and the second, hoof pads. J. B. Woodruff is president of the new company, but the organization is not yet complete. The offices are in the Marine building, Lake and La Salle streets. It is not planned, for the present, at least, to undertake manufacturing. The new company will place upon the market soon a heel made of cork and rubber combined, which will be lighter in weight than other heels, and is expected to wear longer, while it will cost less than heels made of rubber alone. The horse pad business is growing rapidly in the West. It is estimated that in Chicago pads are used in shoeing 70 per cent. of the horses used on the streets, and that 100,000 pairs were marketed in the city last year.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co. :

| DATES. | COMMON. | | | PREFERRED. | | |
|---------------------|---------|------------------|------------------|------------|------------------|------------------|
| | Sales. | High. | Low. | Sales. | High. | Low. |
| Week ending Mar. 26 | 2,495 | 13 $\frac{3}{8}$ | 13 | 3,040 | 54 $\frac{1}{2}$ | 52 $\frac{1}{2}$ |
| Week ending Apr. 2 | 3,030 | 14 $\frac{1}{8}$ | 13 $\frac{1}{2}$ | 4,165 | 56 $\frac{3}{8}$ | 54 |
| Week ending Apr. 9 | 3,425 | 14 $\frac{1}{8}$ | 13 | 6,522 | 59 $\frac{1}{8}$ | 56 $\frac{1}{2}$ |
| Week ending Apr. 16 | 1,200 | 13 $\frac{3}{8}$ | 13 $\frac{1}{2}$ | 2,800 | 59 $\frac{3}{8}$ | 57 |
| Week ending Apr. 23 | 8,750 | 15 | 12 $\frac{3}{8}$ | 16,622 | 64 $\frac{3}{8}$ | 57 |

RUBBER Goods Manufacturing Co. :

| DATES. | COMMON. | | | PREFERRED. | | |
|---------------------|---------|------------------|------------------|------------|------------------|------------------|
| | Sales. | High. | Low. | Sales. | High. | Low. |
| Week ending Mar. 26 | 2,250 | 20 $\frac{1}{4}$ | 19 $\frac{3}{4}$ | 428 | 79 $\frac{1}{4}$ | 77 $\frac{1}{2}$ |
| Week ending Apr. 2 | 1,100 | 19 $\frac{3}{8}$ | 19 | 380 | 79 | 77 $\frac{3}{4}$ |
| Week ending Apr. 9 | 1,020 | 19 $\frac{3}{8}$ | 19 $\frac{1}{2}$ | 575 | 79 $\frac{3}{4}$ | 79 |
| Week ending Apr. 16 | 7,435 | 19 $\frac{1}{2}$ | 14 $\frac{3}{4}$ | 810 | 79 | 76 $\frac{1}{2}$ |
| Week ending Apr. 23 | 1,626 | 16 $\frac{3}{4}$ | 15 $\frac{3}{8}$ | 100 | 76 $\frac{1}{2}$ | 76 $\frac{1}{2}$ |

CONSOLIDATED RUBBER TIRE CO.

THE annual meeting of shareholders will be held on May 2, at the registered office of the company, No. 15 Exchange place, Trenton, New Jersey, at 12 o'clock noon. A special meeting of shareholders will be held on the same day to act upon a resolution of the board of directors to decrease the capital stock from \$5,149,500 to \$1,949,500. The proposed reduced capital is to consist of 11,495 shares of 6 per cent. cumulative preferred stock, and 8000 of common stock—all shares of the par value of \$100. The present holders of common stock under this arrangement would surrender all shares now held and receive in lieu of every five shares so surrendered one share of the new common stock. The report to be presented at the annual meeting will show a surplus of income over expenses for the calendar year 1903 of \$105,292. Deducting a deficit of \$62,535 for the preceding year, the profit and loss surplus at the end of the year stood at \$42,757. A payment has been made this year on the company's bonds.

RUBBER LOSSES IN THE GREAT TORONTO FIRE.

THE most destructive fire in the history of Toronto began at 8 P. M. on April 19, in the business heart of the city, and within eight hours had devastated 14 acres, causing a loss estimated by insurance experts of at least \$13,000,000, on which there was about \$8,885,000 of insurance. Besides large and small warehouses and stores, many factories were swept away, and the number of employes put out of work is estimated at 10,000. A notable spirit of enterprise has been displayed by the firms who suffered losses, and a hopeful spirit prevails with regard to the rebuilding of the burned district. The large warehouse of the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, at Nos. 47-49 Front street, West, was destroyed, with its contents. While the fire did not attack Front street before 11 P. M., the first editions of the morning newspapers contained large advertisements by the company announcing that the destruction of their warehouse would not interfere with the prompt filling of orders. Their loss was \$500,000, fully covered by insurance. President Warren telegraphed to THE INDIA RUBBER WORLD:

We are all right; organization and *esprit* quite equal to emergency; no interruption of business; fortunately new factory complete and able to fill all orders without inconvenience to customers or ourselves. If any of our friends in the States are hard pressed will gladly help them out with their orders. Everything valuable, except merchandise, safe in our big vaults. Had options for materials and labor necessary to rebuild all arranged for before fire extinguished.

The Toronto branch of the Canadian Rubber Co. of Montreal was burned out; also the warehouse of Ames, Holden Co., Limited, wholesalers of boots and shoes and rubbers, and distributing agents of the Granby Rubber Co. The store of the Toronto Rubber Co. was burned, and that of George E. Boulton & Co., dealers in rubber goods. Also the offices of the I. B. Kleinert Rubber Co. (New York) and of George Borgfeldt & Co., importers of rubber and other goods.

The Gutta Percha and Rubber Manufacturing Co. have established new offices at No. 15 Wellington street, East.

NEW INCORPORATIONS.

THE Crocker Rubber Co. (Brockton, Massachusetts), March 30, 1904, under Massachusetts laws, to conduct a retail rubber store; capital, \$5000. Directors: George I. Crocker, Brockton; Isaac Crocker, Angelo H. Alexander and William J. McCaw, Providence, R. I.; Fred. A. Jewell, Lawrence, Mass.; Daniel S. Latham, Auburn, Mass.; William E. Rowe, Wollaston, Mass. Further mention is made in another column.

= Pennsylvania Rubber Co. of New York, April 6, 1904, under New York laws; capital, \$5000. To conduct the business in this state of the Pennsylvania Rubber Co. (Jeannette, Pennsylvania). Directors: Frank A. Wilcox, Jeannette, Pa.; Jesse Froehlich, New York city; Frank P. Hayes, Brooklyn. New York office: No. 1699 Broadway.

= Banigan Rubber Co. (Boston), April 11, 1904, under Massachusetts laws; capital authorized, \$25,000. Incorporators: Clarence L. Weaver, Newton, Mass.; Edward R. Rice, Buffalo, N. Y.; and Charles W. Barnes, New York city. Mr. Weaver is president and Mr. Rice clerk of the corporation. Object, to sell boot and shoe products of the Joseph Banigan Rubber Co.; store at Nos. 77-79 High street, Boston.

= Hercules Tire Co. (Boston and New York), March 30, 1904, under Massachusetts laws; capital authorized, \$100,000. Incorporators: Charles F. Palmer (president), Boston; Sarah A. Barry (treasurer), Charlestown, Mass.; William T. Rollins (clerk), Charlestown.

= St. John Rubber Tire Co. (New York), April 19, 1904, under New York laws; capital, \$9000. Directors: Benjamin Moore and E. W. Morrow, New York city; H. N. St. John, Brooklyn.

The company have been marketing for some time a special cushion tire.

=The Akron Dental Rubber Co. (Akron, Ohio), April 28, 1904, under Ohio laws. Officers: George W. Aultman, president; Arthur C. Squires, vice president and manager; William J. Aultman, secretary and treasurer. The company will erect a factory to make rubber dental specialties under patents granted to Mr. Squires.

=T. S. Buck Manufacturing Co. (New York city), April 27 1904, under New York laws; to make rubber hand stamps and automatic inking stamps; capital, \$100,000. Directors: Taylor S. Buck, T. L. Buck, Brooklyn; Frank White, Albany. To continue the business of Taylor S. Buck, No. 227 Canal street.

THE GOODYEAR TIRE AND RUBBER CO. (AKRON).

A PLAN of reorganization of this company has been submitted to their creditors, who are offered the option of taking in full for their claims stocks and bonds of the company, or a certain percentage of cash and the remainder in securities. The present capital is \$500,000, in common stock, of which the plan calls for the surrender of \$150,000. There are to be issued \$500,000 of 6 per cent. cumulative preferred shares, and \$300,000 of 10 year 6 per cent. bonds, secured by mortgage on the company's plant. Creditors may take for their claims (A) 40 per cent. in bonds and 60 per cent. in preferred shares, or (B) 20 per cent. in cash and 40 per cent. in bonds. Creditors are invited to deposit their claims with The Cleveland Trust Co. (Cleveland, Ohio) before July 1, 1904, and the plan is to be declared operative whenever claims have been so deposited to a sufficient amount to seem to warrant the success of the reorganization. The company are to have the right to redeem bonds and preferred shares at any time.

RUBBER HOOF PAD SUIT IN TRENTON.

The suit of the Farrier Hoof Pad Co. against Albert E. Wheatcroft for an injunction restraining him from in any disposing of an invention in hoof pads was decided in the Court of Chancery April 4 in favor of the company. By the terms of the settlement the shares of stock of the company claimed by Wheatcroft were to be turned over to him, and he in turn was to turn over the patent right to the company. These mandates of the court have been complied with and the company will continue to manufacture the hoof pads as formerly. [See THE INDIA RUBBER WORLD March, 1904—page 215.]

TRENTON RUBBER MANUFACTURING CO.

THE Trenton Rubber Manufacturing Co. finished and shipped the last week in April a special order for their "Black Bear" packing, consisting of two rolls weighing 1400 pounds each, full 36 inches wide and $\frac{1}{4}$ inch thick. The company state that though the "Black Bear" is a high priced packing it is rapidly growing in popularity. This brand is now marketed with a handsome black finish that is the cause of much favorable comment among dealers. The Trenton company have just completed a complete overhauling of their machinery, and this, with the improvements made a few months ago, places this factory in the best possible shape to turn out goods. The factory is busy and trade is reported good.

TRADE NEWS NOTES.

THE Franklin Rubber Co. (Boston) have begun work on an addition to their factory at Malden, to be of brick, one story high, 62 x 62 feet. Upon the completion of this structure the entire manufacturing plant of the company will be located at Malden with offices and salesrooms as heretofore at No. 105 Summer street, Boston.

=A fire occurred in the factory of the Durham Rubber Co., Limited (Bowmanville, Ontario), on March 28, caused by an

explosion in the cement building. The company's fire brigade extinguished the flames after damage had been done to the extent of \$2000, which is covered by insurance.

=Mr. J. M. Hardy, who is widely known in the trade, will be connected with the Eureka Fire Hose Co. (New York), after May 1, with full charge of their fire hose business in the New England states.

=The Elmira Rubber Co. (Elmira, New York), the incorporation of which was reported in the last INDIA RUBBER WORLD, has for its objects the sale of the Hood Rubber Co.'s brands of boots and shoes. M. H. Murphy is president, M. A. Kelly vice president, and John Keefe secretary and treasurer.

=James A. Young, of the Durham Rubber Co., Limited (Bowmanville, Ontario), was in New York during the month to expedite the shipment of a much delayed lot of cotton duck, much needed at the factory, which lately had been running day and night on mechanical rubber goods, and particularly on pneumatic tires.

=The Standard Last Co. (Montreal, Quebec), organized to combine the shoe last plants operated formerly by the Canadian Rubber Co. and the Granby Rubber Co., are reported to be doing a good business, making lasts for both leather and rubber shoes, and having a capacity for 300 pairs a day.

=The Rubber Soled Leather Shoe Co. (Boston) have been petitioned into involuntary bankruptcy at the instance of creditors whose claims amount to \$1890.73.

=The Marion Insulated Wire and Rubber Co. (Marion, Indiana), who are now manufacturing insulated wires, expect soon to produce a full line of soft rubber goods.

=The factory property occupied by the late firm of George Watkinson & Co., manufacturers of rubber footwear, situated at Thirty-sixth and Reed streets, Philadelphia, has been purchased by the Philadelphia Rubber Works. The latter company are not prepared, however, to announce any plans with regard to the future use of the property.

PERSONAL MENTION.

In the sketch of Mr. James Bennett Forsyth, in the April 1 issue of THE INDIA RUBBER WORLD, a regrettable printer's error gave the date of his becoming superintendent of the Boston Belting Co. as 1886, whereas, of course, the figure should have been 1866.

=John H. Ferris, a prominent citizen of South Norwalk, Connecticut, died in that city on April 10, aged 62 years. He was a director in the Manhattan Rubber Manufacturing Co. (New York), of which his son, Jesse M. Ferris, is treasurer. He was also a large owner of coasting schooner interests, and a director in several South Norwalk institutions. He represented his town in the Connecticut legislature in 1887, and in 1889 was a state senator.

=At the last regular meeting of the New York section of the Society of Chemical Industry, at the Hotel Savoy, on the evening of April 22, the first paper on the program was one on "Resins of Gutta-percha and Allied Gums as a Means of Identification," by Wilton G. Berry, of the laboratory connected with the office of the appraiser of merchandise, United States Customs Service, New York.

=Mr. Arthur E. Friswell has resigned the position of assistant superintendent of the Hartford Rubber Works Co., and leaves soon for a six months' rest in Europe.

=Mr. A. H. Alden, of the New York Commercial Co., sailed for Europe on April 23.

=Mr. Waldemar Scholz, of the firm of Witt & Co., rubber merchants, of Manáos, Brazil, was a visitor to New York by the steamer *Hildebrand*, from that port, which arrived here on March 28. Mr. Scholz returned by the same steamer.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: "Very few tire manufacturers are making money on their tires at this time," said a prominent manufacturer to your correspondent. "Most of the tire contracts for 1904 were made with no thought of the present high price of washed rubber in view, and as a result the companies which did not have a large supply on hand before the price went up have been caught. If the present price continues throughout the season, next year will see a general advance all along the line, not only in tires, but in other lines. We simply cannot make tires at present prices and make money. There must be an increase in the finished product."

"In this connection it is asserted that the tariff is responsible for the large number of tires which are made in this country. It is well known that Americans were not the originators of automobile tires. The first ones were made in France, and had it not been for the tariff, the United States would have been flooded with French tires, and the manufacturers here wouldn't have had the opportunity they had to perfect their inventions along this line. As matters now stand, the American made tire compares favorably, and there are many who claim that it is superior, to the French tire. Akron probably sends out more tires than any other American city. At the last nine automobile shows two companies of this city had 100 per cent. more tires on the machines exhibited than all other manufacturers combined. This is proof that the bulk of the automobile tires used in America are made in Akron."

While much has been written about the selling pool for automobile tire manufacturers, very few people outside of the companies interested have any idea of its practical workings. It is known in a general way that the pool dictates what kind of tires shall be fitted to the various rims allowed by the pool, but very few know how this is accomplished. The selling pool have inspectors who inspect every standard rim made, and unless the rims bear the stamp of the pool the manufacturers' guarantee is no good. For instance, if an automobile owner should return a poorly made tire to a manufacturer upon a rim which did not bear the mark of the selling pool, the manufacturers would refuse to replace the tire, no matter how poorly the tire had worn. In this manner the manufacturers are assured that their tires are fitted to the proper kinds of rims, and their tires are given a chance to show their merits.

* * *

THE Pure Gum Specialty Co., of Barberton, have begun suit in common pleas against Harvey Mitzel and George M. Eby, a partnership doing business in Akron as the Mitzel Rubber Co., asking that they be restrained from using the name "Mitzel" as a trademark. It is alleged that Mitzel was the former owner of the Pure Gum Specialty Co., during which time the trademark "Mitzel" was used upon goods manufactured by them. The trademark is registered, the petition avers, and is a valuable asset of the company.

* * *

THE American Hard Rubber Co. are putting out a three-holed hard rubber bowling ball, patterned after the ball used by Charles Mountain, the famous Milwaukee bowler, and it is meeting with the approval of bowlers very widely. Experiments are also being made with fiber finger holes, some bowlers claiming that the hard rubber makes an unsatisfactory grip, and the company are endeavoring to meet every objection that may be made against the ball.

The American Hard Rubber Co. are getting out souvenirs

for the Akron City Bowling Association in the shape of a miniature bowling ball attached to a pin. The Akron association is trying to capture the state tournament and meeting of the Ohio State Bowling Association, and the delegation from Akron will flood the convention in Columbus in May with hundreds of the little balls.

* * *

THE B. F. Goodrich Co. are engaging in the manufacture of hard rubber specialties needed in their work. Formerly they were engaged extensively in the manufacture of hard rubber goods, for which they maintained a separate plant. This was sold in 1898 to the American Hard Rubber Co., who still operate it. The Goodrich company thereafter bought their hard rubber requirements of the American company, but of late have begun to make them in their own factory. The Diamond Rubber Co., as has been mentioned in THE INDIA RUBBER WORLD, also make hard rubber goods, for which they have an extensive plant.

Mr. E. C. Shaw, superintendent of The B. F. Goodrich Co., is slowly recovering from an attack of sickness in a New York hospital. In his absence Mr. C. C. Goodrich has been in charge of his office.

The officers of the Second National Bank presented Colonel George T. Perkins, president of The B. F. Goodrich Co., and for a number of years president of the bank, with a solid silver loving cup, at the regular monthly meeting of the board of directors held on April 4. This meeting marked the end of Mr. Perkins's connection with the bank as president, although he is still retained on the official board.

* * *

WILL CHRISTY, president of the Firestone Tire and Rubber Company, has become interested in the American Engineering and Reduction Co., and at a recent meeting of the shareholders was made a director, and later elected president of the company. J. R. Nutt, a partner of Mr. Christy and one of the promoters of the People's Hard Rubber Co., is also a director in the company.

Dr. L. E. Sisler, secretary and treasurer of the Firestone Tire and Rubber Co., is being boomed by his friends as delegate from the Akron district to the Republican national convention, and there is reason to believe that he will secure the place.

Mr. H. S. Riddle, mechanical engineer of the Diamond Rubber Co., has resigned. It is understood that he will accept a lucrative position with another company.

Mr. I. R. Bailey has been made general manager of the mechanical department of the Diamond Rubber Co., comprising the belting, packing, hose, and molded goods departments, which heretofore have been under different heads.

THE RUBBER TRADE IN TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The strike inaugurated January 18, by Trenton Local, No. 4, of the Amalgamated Rubber Workers' Union of America, was formally declared off by the union at a special meeting held on April 3. There were 147 rubber workers present at the meeting and the vote showed 89 in favor of going back to work without conditions, and 58 against it.

James E. O'Donovan, secretary of the union, who was the leader of the strike, said to THE INDIA RUBBER WORLD correspondent: "Primarily the strike failed because of a lack of financial support. While other causes contributed, the need of funds was the weak point in the fight. The union started the strike with barely more than \$1000 in the treasury, in the

belief that contributions enough would be received to keep the fight up. Some assistance was received, but not enough to enable us to hold out. After the third week no benefits were paid except to a few men with large families."

The *Labor Union Advocate*, the official organ of organized labor in Trenton, in its issue of April 9 charged that the strike had failed through the misrepresentations of the national officers of the Rubber Workers' Union, and through the treachery of members of the Trenton union who deserted the strikers and returned to work. Secretary O'Donovan denied the first charge, but admitted that the second was true. Secretary O'Donovan stated that while the union has been seriously crippled by the failure of the strike, it will be continued and reorganized by the faithful ones among the membership.

* * *

THE old rubber mill at Morrisville, Trenton's Pennsylvania suburb, which was abandoned a few months ago by the Vulcanized Rubber Co., is a historic building, and of especial interest now that Morrisville citizens are preparing to celebrate the centennial of the village, on May 17. The old mill was built by Robert Morris, the founder of Morrisville and the financier of the war of the American revolution, who lived near the site of the mill and erected the building as his stables. There is still on the roof the original cupola, topped with a galloping horse as a weather vane. Robert Morris made possible the victory of Washington at the battle of Trenton, which turned the tide of the revolution. Washington with his army was encamped on the Pennsylvania side of the river and had his sloop upon the Hessians all planned, but boats and supplies were lacking. Mr. Morris on his own security raised \$10,000 among his Quaker neighbors and furnished General Washington the needed supplies.

Later the stables were used by General Moreau, who came to America with Joseph Bonaparte, brother of Napoleon, and Waddell, who were compelled to leave France after the battle of Waterloo. General Moreau and Waddell settled near Morrisville, and Bonaparte at Bordentown. Still later the building was used as a stable by the Trenton and Philadelphia railroad, out of which grew the present main line of the Pennsylvania railroad from New York to Philadelphia. The first section of the old road mentioned, extended from Morrisville to Bristol, and before the bridge across the Delaware at Trenton was built, horses were used as the motive power; hence the need of a stable. When steam was adopted, the old stable was turned into a repair shop.

The factory days of the historic structure began with the civil war period, when it was used for the manufacture of oil cloth. In its next transformation the building became a pottery and as such was operated by Martin, Potts & Tams, of Trenton.

Its days as a rubber mill date from 1873, when Dr. R. S. Dana and John W. Thompson, of Morrisville, organized the Morrisville Manufacturing Co. and started a soft rubber factory. Mr. Thompson was president and Dr. Dana treasurer. The first work was the manufacture of wringer rolls under a patent of John Mackechney, who was made foreman of the works. This not proving successful, the work was changed to the making of hose, car springs, etc., and later a hard rubber department was started, in which surgical battery receivers and similar goods were made.

Dr. Dana states that the firm also did a heavy business in floor cloths. This factory was the first to make these in rolls of unlimited lengths; previously cloths about 8 x 2½ feet, made in molds, were the largest manufactured. This firm lasted about seven years and the last year of its existence Dr.

Dana was the manager of the factory. He had become the owner of the building, and at the dissolution of the Morrisville Manufacturing Co. rented it to James F. Brook, founder of the Globe Rubber Co., of Trenton. Mr. Brook only retained it about three months. Then a man named Banks leased it for the making of hard rubber goods. Mr. Banks originated the Keystone Co., which later moved to Hoboken.

The next step was when S. S. Sonneborn operated it under the Keystone lease. Some time later Myer Dittenhoefer, now president of the Vulcanized Rubber Co., who at that time had become one of the leading spirits in the Keystone Co., came to Morrisville and organized the Goodyear Vulcanite Co. This concern operated the factory successfully and added a number of frame buildings to the old brick structure. This firm was changed to the Vulcanized Rubber Co. which built the splendid new factory in Morrisville. It is understood that the lease under which the Vulcanized Rubber Co. operated the factory has two years yet to run. It is understood that the company will tear down the frame buildings which it erected and then endeavor to dispose of the lease.

* * *

THE Woven Steel Hose and Rubber Co. have reflected the old officers: John S. Broughton president, John H. Janeway, Jr., vice president, Karl G. Roebeling treasurer. Manager Kelso states that the sales of this company are considerably ahead of those of last year. The company is putting on the market a new brand of hose, known as convex steel armored, for air, water, or steam pressure. The armor is a special pattern, rolled at the Roebeling mills in Trenton, and applied to the hose by special machinery.

* * *

WORK has been commenced by the Hamilton Rubber Manufacturing Co. on the construction of a new frame storehouse, to measure 40 x 200 feet. The land owned by the company between their factory and the Pennsylvania railroad is being enclosed with a substantial fence. The company's coal trestle, which was damaged recently by the coal igniting and burning for some time, has been repaired. The company report that the new artesian well is a success and the whole supply of water needed is secured from it.

* * *

No decision has been given yet in the suit of the Eureka Fire Hose Co. (Jersey City) against the Eureka Rubber Manufacturing Co. of Trenton for an order restraining the latter company from using the word "Eureka". Argument on the evidence in the case took place before Vice Chancellor Emory in Newark on April 4, and he still has the matter under advisement.

The Consolidated Rubber Co. report business as rushing, with orders booked two months ahead. Manager Harry E. Evans stated that the company were as busy as they cared to be.

William McCabe, aged 28, assistant engineer at the factory of the Crescent Belting and Packing Co., had his left hand so badly crushed in a mixing mill in the factory on April 15, that amputation was necessary. He was on duty with the night turn, and, the superintendent says, had no orders to go near the mill, as that was not a part of his work.

The Crescent Belting and Packing Co. report business as unusually good, and state that the output of hose this season will exceed that of any previous year. The mill is being operated steadily, night and day. A satisfactory number of orders are being booked ahead.

The rubber cutters at the mill of the Lambertville Rubber Co. have formed a union and elected George Hartman president, Frank Cole secretary, and Horatio Ege treasurer.

ADDITIONAL TRADE NOTES.

THE four members of Boston Rubber Garment Workers' Union, No. 174, including President Nurenberg, mentioned in the last INDIA RUBBER WORLD as having been expelled for going back to their work in the Union Rubber Co.'s factory while a strike was in progress there, were reinstated in the Union on April 21. Meanwhile, the strike of the garment makers, ended on March 17, had been declared on again.

=The foremen and clerks of L. Candee & Co, (New Haven, Connecticut), to the number of fifty, on the evening of April 20, tendered a complimentary banquet to their superintendent, Mr. John H. Pearce, at the Tontine Hotel, New Haven.

=The Consolidated Rubber Tire Co. (New York) have leased the premises No. 2334 Olive street, St. Louis, which are being remodelled for their use.

=The new courthouse now building at Syracuse, New York, will be floored with the "Interlocking" tiling of the New York Belting and Packing Co., Limited. The original contract was for marble floors, but this was changed by the board of supervisors.

=At the recent annual town meeting of Cranston, Rhode Island, a resolution to exempt the Atlantic Rubber Shoe Co. from taxation for five years was defeated.

=The Russell Manufacturing Co. have decided to equip their

plant at Rockfall, Connecticut, devoted hitherto to the making of cotton yarns, with looms for the manufacture of elastic webbing. Webbing is now made at some of the company's mills in South Farms, in the same state.

=Mr. J. Edwin Davis has joined forces with the Continental Rubber Works (Erie, Pennsylvania) and will have full charge of their sales. The small plant which he has been operating for some time at Buffalo, New York, has been given up, and the machinery disposed of.

=Morgan & Wright (Chicago) are pushing actively a line of rubber heels.

=Frank Venn has been placed in charge of the packing department of the Edgeworth factory of the Boston Rubber Shoe Co., to succeed John N. Williams, resigned. Mr. Williams had occupied the position for 29 years, while Mr. Venn has been in the employ of the company for 25 years. Mr. Venn has been mentioned in THE INDIA RUBBER WORLD several times as the patentee of an ingenious device for marking rubber boots and shoes with sizes.

=Albert B. Beers, broker in India-rubber and commercial paper (New York) will, on May 1, remove from No. 58 William street to No. 68 William street.

=E. H. Cutler, formerly selling agent of the Woonsocket Rubber Co., is now connected with the selling department of the Atlantic Rubber Shoe Co.

REVIEW OF THE CRUDE RUBBER MARKET.

THERE was a somewhat easier condition of the market during the first part of the month, including a decline amounting to 4 cents on higher Pará grades. Latterly, however, prices have advanced to the level which existed at our last report, besides which they are more firmly held. While arrivals have continued heavy, deliveries for consumption have been large.

The report of the last Antwerp sale, in another column, would indicate a declining market there. It should be noted, however, that while the prices obtained were lower in some cases than the brokers' valuations, the valuations had been raised. The prices paid were on a parity with the actual prices of the preceding month.

Respecting the condition of the trade an importer states: "Of course there is a 'corner' on rubber, and a bad one, but it came about in the desire to get rubber for actual consumption and not as a speculation. The United States Rubber Co. bought so heavily for their present and future needs that they got a large share of the stock in sight; then the importers, to cover their 'shorts,' were forced to jump in and get what they could. It is a corner, but a perfectly natural one."

Arrivals at Pará, of all grades, including Caucho, for the past four seasons, have been as follows, in metric tons:

| | 1900-01. | 1901-02. | 1902-03. | 1903-04. |
|----------------------|----------|----------|----------|----------|
| To December 31..... | 11,300 | 13,630 | 12,250 | 13,470 |
| To April 30. | 24,350 | 26,670 | 26,020 | a 26,305 |

[a—To April 28, 1904.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on April 29—the current date:

| PARA. | May 1, '03. | Apr. 1, '04. | Apr. 29. |
|---------------------------|-------------|--------------|----------|
| Islands, fine, new..... | 90@91 | 107@108 | 108@109 |
| Islands, fine, old..... | 92@93 | @ | @ |
| Upriver, fine, new..... | 92@93 | 109@110 | 111@112 |
| Upriver, fine, old..... | 98@99 | 110@111 | 112@113 |
| Islands, coarse, new..... | 59@60 | 67@68 | 64@65 |
| Islands, coarse, old..... | @ | @ | @ |
| Upriver, coarse, new..... | 72@73 | 86@87 | 86@87 |
| Upriver, coarse, old..... | @ | @ | @ |

| | | | |
|------------------------------|-------|-------|-------|
| Caucho (Peruvian) sheet..... | 59@60 | 64@70 | 69@70 |
| Caucho (Peruvian) ball..... | 70@71 | 77@78 | 78@79 |

The market for other sorts in New York, changes in which have been about the same, is as follows:

| AFRICAN. | | CENTRALS. | |
|------------------------------|-----|--------------------------|-----|
| Sierra Leone, 1st quality 95 | @96 | Esmeralda, sausage... 77 | @78 |
| Massai, red..... 95 | @96 | Guayaquil, strip..... 67 | @68 |
| Benguella. 75 | @76 | Nicaragua, scrap... 76 | @77 |
| Cameroon ball..... 65 | @66 | Panama, slab..... 58 | @59 |
| Accra flake..... 36 | @37 | Mexican, scrap..... 74 | @75 |
| Lopori ball, prime.... 95 | @94 | Mexican, slab..... 56 | @57 |
| Lopori strip, prime.... 92 | @93 | Mangabeira, sheet.... 50 | @57 |
| Ikelemba..... 96 | @97 | EAST INDIAN. | |
| Madagascar, pinky.... 82 | @83 | Assam..... 83 | @84 |
| | | Borneo..... | @ |

Late Pará cables quote:

| | Per Kilo. | | Per Kilo. |
|------------------------|-----------|----------------------|-----------|
| Islands, fine. | 6\$800 | Upriver, fine..... | 8\$000 |
| Islands, coarse..... | 3\$700 | Upriver, coarse..... | 6\$000 |
| Exchange, 12 3/4 d. | | | |

Last Manáos advices:

| | | | |
|---------------------|--------|-----------------------|--------|
| Upriver, fine..... | 8\$000 | Upriver, coarse. | 5\$800 |
| Exchange, 12 1/4 d. | | | |

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show a slight decline from the last published prices, as follows:

| | |
|--|---------------|
| Old Rubber Boots and Shoes—Domestic..... | 6 1/4 @ 6 3/8 |
| Do —Foreign..... | 5 3/4 @ 5 3/8 |
| Pneumatic Bicycle Tires..... | 4 @ 4 1/8 |
| Solid Rubber Wagon and Carriage Tires..... | 7 |
| White Trimmed Rubber..... | 7 1/2 @ 7 3/4 |
| Heavy Black Rubber..... | 4 |
| Air Brake Hose..... | 2 1/4 @ 2 3/8 |
| Fire and Large Hose..... | 1 3/4 @ 1 7/8 |
| Garden Hose..... | 1 3/8 @ 1 1/2 |
| Matting..... | 3/4 @ 1 |

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York) advises us as follows:

"During April money has ruled very easy, and there has been most of the time a good demand for paper at 5@6 per cent. according to grade, and in some instances as low as 4½ per cent. for prime notes."

Statistics of Para Rubber (Excluding Caucho).

| | NEW YORK. | | | Total 1904. | Total 1903. | Total 1902. |
|------------------------------|------------------|---------|--------|-------------|-------------|-------------|
| | Fine and Medium. | Coarse. | | | | |
| Stocks, February 29.....tons | 102 | 13 | = 115 | 299 | 704 | |
| Arrivals, March..... | 1654 | 762 | = 2416 | 1671 | 1407 | |
| Aggregating..... | 1756 | 775 | = 2531 | 1070 | 2111 | |
| Deliveries, March..... | 1539 | 746 | = 2285 | 1431 | 1517 | |
| Stocks, March 31..... | 217 | 29 | = 246 | 539 | 594 | |

| | PARÁ. | | | ENGLAND. | | |
|--------------------------|-------|-------|-------|----------|-------|-------|
| | 1904. | 1903. | 1902. | 1904. | 1903. | 1902. |
| Stocks, Feb. 29.....tons | 435 | 30 | 1030 | 380 | 1145 | 1610 |
| Arrivals, March..... | 3970 | 4030 | 3115 | 875 | 1455 | 1190 |
| Aggregating..... | 4405 | 4060 | 4145 | 1255 | 2600 | 2800 |
| Deliveries, March..... | 3800 | 3305 | 3585 | 775 | 1050 | 975 |
| Stocks, Mar. 31..... | 605 | 255 | 560 | 480 | 1550 | 1825 |

| | 1904. | 1903. | 1902. |
|--|--------|--------|--------|
| World's visible supply, March 31.....tons | 2506 | 4547 | 5811 |
| Para receipts, July 1 to March 31..... | 22,345 | 21,211 | 22,269 |
| Para receipts of Caucho, same dates..... | 3129 | 2329 | 2236 |
| Afloat from Para to United States, March 31. | 392 | 1229 | 1232 |
| Afloat from Para to Europe, March 31..... | 783 | 974 | 1600 |

Rubber Receipts at Manaus.

DURING March and the first nine months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

| FROM— | MARCH. | | | JULY-MARCH. | | |
|-------------------------|--------|-------|-------|-------------|--------|--------|
| | 1904. | 1903. | 1902. | 1904. | 1903. | 1902. |
| Rio Purús—Acre.....tons | 234 | 567 | 795 | 5165 | 5040 | 5914 |
| Rio Madeira..... | 356 | 206 | 298 | 2444 | 2074 | 2579 |
| Rio Juruá..... | 329 | 384 | 505 | 3111 | 3155 | 3194 |
| Rio Javary—Iquitos..... | 115 | 85 | 198 | 2183 | 1415 | 1210 |
| Rio Solimões..... | 46 | 103 | 58 | 735 | 1268 | 1450 |
| Rio Negro..... | 26 | 90 | 58 | 384 | 539 | 317 |
| Total..... | 1106 | 1435 | 1912 | 14,022 | 13,491 | 14,664 |
| Caucho..... | 630 | 372 | 567 | 2760 | 2139 | 2393 |
| Total..... | 1736 | 1807 | 2479 | 16,782 | 15,630 | 17,057 |

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The easier tone for Para sorts made itself felt at our inscription sale of April 15. Some fine grades sold at unchanged prices, but less well conditioned lots were cheaper. The average decline may be calculated at about 2½ per cent., or 22 to 25 centimes per kilogram. The principal lots sold as follows:

| | Valuation. | Sold at. |
|---------------------------------|------------|---------------|
| 137 tons Uelé strips.....francs | 9 70 | 9 57½ @ 9 70 |
| 31 " Aruwimi..... | 9 90 | 9 05 @ 9 90 |
| 22 " Upper Congo ball..... | 10 85 | 10 50 @ 10 60 |
| 10 " Mongalla strips..... | 10 50 | 10 15 |
| 14 " Uelé strips..... | 10 15 | 10 15 |
| 16 " Lomami pieces..... | 11. | 10 70 |
| 14 " Katanga red..... | 10 65 | 10 50 |

The next monthly sale will take place on May 10 when about 400 tons will be catalogued. Actual stock now about 450 tons.

C. SCHMID & CO., SUCCESEURS.

Antwerp, Belgium, April 18, 1904.

RUBBER ARRIVALS AT ANTWERP.

MARCH 23.—By the *Anversville*, from the Congo:

| | |
|---|---------|
| Bunge & Co.....(Société Générale Africaine) kilos | 127,000 |
| Do.....(Chemins de fer des Grand Lacs) | 1,000 |
| Do.....(Société Isangi) | 10,000 |

| | |
|---|---------|
| Bunge & Co.....(Société Anversoise) | 28,000 |
| Do.....(Société "La Kotto") | 3,000 |
| Do.....(Sultanats du Haut Obangi) | 2,000 |
| Société A B I R..... | 76,000 |
| W. Mallinckrodt & Co.....(La Lobay) | 5,000 |
| Charles Dethier.....(La Haut Sangha) | 3,000 |
| Société Coloniale Anversoise.....(Sud Kamerun) | 7,000 |
| Do.....(La Lulunga) | 3,000 |
| Do.....(Belge du Haut Congo) | 7,000 |
| Do.....(Cie. du Kasai) | 35,000 |
| Do.....(Cie. de Lomami) | 15,000 |
| M. S. Cols.....(Société Baniémbé) | 6,000 |
| Comptoir des Produits Coloniaux (Cie. de la N'Goko) | 4,000 |
| Do.....(Produits de la Sangha) | 1,000 |
| | 333,000 |

APRIL 12.—By the *Philippeville*, from the Congo:

| | |
|---|---------|
| Bunge & Co.....(Société Générale Africaine) kilos | 43,000 |
| Do.....(Société Anversoise) | 6,000 |
| Do.....Comite Spécial Katanga) | 19,000 |
| Do.....(Sultanats du Haut Obangi) | 11,000 |
| Société A B I R..... | 21,000 |
| Société Equatoriale Congolaise..... | 5,000 |
| L. & W. Van de Velde.....(Cie. du Kasai) | 15,000 |
| W. Mallinckrodt & Co.....(Allamienne) | 4,000 |
| Do.....(La Lobay) | 4,000 |
| M. S. Cols.....(Société L'Ikelemba) | 1,000 |
| Société Coloniale Anversoise, (Belge du Haut Congo) | 8,000 |
| Do.....(Cie. de Lomami) | 1,000 |
| Comptoir des Produits Coloniaux..... | 6,000 |
| Do..... | 2,700 |
| Charles Dethier.....(La M'Poko) | 7,000 |
| Comptoir Commercial Anversois.....(Société Ibenga) | 500 |
| Cie. Commercial des Colonies..... | 3,000 |
| | 157,200 |

ANTWERP RUBBER STATISTICS FOR MARCH.

| DETAILS. | 1904. | 1903. | 1902. | 1901. | 1900. |
|----------------------------|-----------|-----------|-----------|-----------|-----------|
| Stocks, Jan. 31. kilos | 335,090 | 475,536 | 984,820 | 781,100 | 618,800 |
| Arrivals in March..... | 751,077 | 428,455 | 258,131 | 570,052 | 416,278 |
| Congo sorts..... | 646,124 | 398,745 | 235,318 | 528,795 | 332,587 |
| Other sorts..... | 104,953 | 29,712 | 22,813 | 41,257 | 83,691 |
| Aggregating..... | 1,086,167 | 903,993 | 1,242,951 | 1,351,152 | 1,035,078 |
| Sales in March..... | 385,432 | 632,109 | 401,273 | 507,318 | 300,018 |
| Stocks, March 31..... | 700,735 | 271,884 | 841,678 | 843,834 | 735,060 |
| Arrivals since Jan. 1..... | 1,637,802 | 1,146,128 | 1,501,489 | 1,573,310 | 1,776,314 |
| Congo sorts..... | 1,322,806 | 1,008,997 | 1,436,689 | 1,403,291 | 1,475,996 |
| Other sorts..... | 314,996 | 137,131 | 64,802 | 170,017 | 300,318 |
| Sales since Jan. 1..... | 1,547,967 | 1,532,349 | 1,074,520 | 1,343,515 | 1,333,245 |

London.

EDWARD TILL & Co. [April 1] report stocks:

| | 1904. | 1903. | 1902. |
|------------------------------|-------|-------|-------|
| LONDON { Para sorts.....tons | — | — | — |
| Borneo..... | 4 | 26 | 132 |
| Assam and Rangoon..... | 6 | 3 | 39 |
| Other sorts..... | 206 | 188 | 438 |
| Total..... | 216 | 217 | 609 |
| LIVERPOOL { Para..... | 483 | 1548 | 1821 |
| Other sorts..... | 668 | 760 | 896 |
| Total, United Kingdom..... | 1367 | 2525 | 3326 |

PRICES PAID DURING MARCH.

| | 1904. | 1903. | 1902. |
|--------------------------|-----------------|---------------|----------------|
| Para fine, hard..... | 4/ 6 @ 4/ 9 | 3/ 8 @ 3/ 10½ | *3/ 0½ @ 3/ 1½ |
| Do soft..... | 4/ 5 @ 4/ 8 | 3/ 8 @ 3/ 10 | †3/ 1 @ 3/ 3½ |
| Negroheads, scrappy..... | 3/ 6½ @ 3/ 9 | 3/ 0½ @ 3/ 1½ | 2/ 5½ @ 2/ 7 |
| Do Cameté..... | 2/ 10½ @ 2/ 11½ | 2/ 5½ @ 2/ 6 | 2/ 2½ @ 2/ 3 |
| Bolivian..... | 4/ 6½ @ 4/ 8 | — | 3/ 1 @ 3/ 2 |

[* Spot. † Forward.]

EDMUND SCHLÜTER & Co. report [March 31]:

The receipts during March have been larger than were expected, but as the deliveries, especially in America, are larger in proportion, there is no accumulation of unsold Para rubber at the consuming centers. Reports from the trade would appear to indicate that although the demand will absorb what Para rubber may arrive during the next few months,

thus preventing a decline in value, the volume of business may not be so large as to necessitate a further advance of prices.

Their preceding report, after analyzing returns of arrivals, deliveries, and stocks, had said:

The figures reveal the remarkable expansion in the trade - - - The general estimate of March, 1904, receipts makes a further reduction of supplies more than probable, and reserve stocks during the next few months, perhaps till the late autumn, are bound to be exceedingly small. Ruling prices would not therefore appear to be at all too high.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

| April 4.—By the steamer <i>Horatio</i> , from Manáos and Pará: | | | | | |
|--|---------|---------|---------|----------|---------|
| IMPORTERS. | Fine. | Medium. | Coarse. | Caucho. | Total. |
| Poel & Arnold..... | 201,000 | 47,700 | 55,200 | 70,400= | 374,300 |
| A. T. Morse & Co..... | 130,600 | 25,300 | 70,600 | 35,600= | 262,100 |
| United States Rubber Co. | 86,800 | 18,900 | 57,400 | 26,000= | 189,100 |
| William Wright & Co..... | 36,300 | 3,000 | 17,400 | .. = | 56,700 |
| G. Amsinck & Co..... | 16,100 | 300 | 6,400 | 3,600= | 26,400 |
| Lionel Hagenaers & Co.. | 5,100 | ..... | 6,400 |= | 11,500 |
| New York Commercial Co. | ..... | ..... | 4,200 |= | 4,200 |
| Edmund Reeks & Co..... | ..... | ..... | 3,200 |= | 3,200 |
| Herbst Brothers..... | 2,200 | ..... | 800 |= | 3,000 |
| Total..... | 478,100 | 95,200 | 221,600 | 135,600= | 930,500 |

PARA RUBBER VIA EUROPE.

| APR. 11.—By the <i>Umbria</i> =Liverpool: | | |
|---|--------|---------|
| IMPORTERS. | Fine. | Medium. |
| George A. Alden & Co. (Caucho) ... | 51,000 | ..... |
| APR. 12.—By the <i>Kronland</i> =Antwerp: | | |
| George A. Alden & Co. (Fine)..... | 12,000 | ..... |
| George A. Alden & Co. (Coarse).... | 1,500 | 13,500 |
| APR. 15.—By the <i>Cedrie</i> =Liverpool: | | |
| Poel & Arnold (Coarse)..... | 15,000 | ..... |
| Poel & Arnold (Caucho)..... | 13,000 | 28,000 |
| APR. 16.—By the <i>Campania</i> =Liverpool: | | |
| Poel & Arnold (Caucho)..... | ..... | 23,000 |

OTHER ARRIVALS AT NEW YORK

CENTRALS.

| MAR. 26.—By the <i>El Dorado</i> =New Orleans: | | |
|--|--------|---------|
| IMPORTERS. | Fine. | Medium. |
| Manhattan Rubber Mfg. Co..... | 6,500 | ..... |
| A. T. Morse & Co..... | 6,500 | ..... |
| A. N. Rotholz..... | 1,000 | 14,000 |
| MAR. 26.—By the <i>Monterey</i> =Mexico: | | |
| Graham Hinkley & Co..... | 2,200 | ..... |
| Fred Probst & Co..... | 2,000 | ..... |
| E. Steiger & Co..... | 1,000 | ..... |
| Isaac Kubie & Co..... | 200 | 5,400 |
| MAR. 28.—By the <i>Pennsylvania</i> =Hamburg: | | |
| Poel & Arnold..... | 2,800 | ..... |
| MAR. 29.—By the <i>Yucatan</i> =Colon: | | |
| Hirzel, Feltman & Co..... | 5,000 | ..... |
| Livingstone & Co..... | 4,800 | ..... |
| Meyer Hecht..... | 2,900 | ..... |
| A. Santos & Co..... | 2,500 | ..... |
| Fred. Probst & Co..... | 2,200 | ..... |
| Dumarest & Co..... | 1,800 | ..... |
| American Trading Co..... | 1,500 | ..... |
| Rosenthal Sons & Co..... | 1,400 | ..... |
| W. B. Grace & Co..... | 1,100 | ..... |
| Isaac Brandon & Bros..... | 700 | ..... |
| G. Amsinck & Co..... | 500 | ..... |
| R. G. Barthold..... | 500 | ..... |
| Bartling & De Leon..... | 400 | ..... |
| Lawrence Johnson & Co..... | 300 | ..... |
| Fidanque Bros & Co..... | 200 | 25,800 |
| MAR. 29.—By the <i>Altai</i> =Greytown: | | |
| Livingstone & Co..... | 9,000 | ..... |
| A. D. Straus & Co..... | 3,500 | ..... |
| E. B. Strout..... | 3,000 | ..... |
| G. Amsinck & Co..... | 2,200 | ..... |
| Andreas & Co..... | 2,000 | ..... |
| Jimenez & Escobar..... | 500 | ..... |
| Pedro A. Lopez..... | 300 | 20,500 |
| APR. 1.—By the <i>Jason</i> =Mexico: | | |
| George A. Alden & Co..... | 11,000 | ..... |
| H. Marquardt & Co..... | 500 | 11,800 |
| APR. 1.—By the <i>El Albo</i> =New Orleans: | | |
| A. T. Morse & Co..... | 3,500 | ..... |
| George J. Worth..... | 3,000 | ..... |
| A. N. Rotholz..... | 2,000 | ..... |
| Eggers & Heinlein..... | 2,000 | 10,500 |

April 6.—By the steamer *Maranhense*, from Manáos and Pará:

| | | | | | |
|--------------------------|---------|--------|---------|---------|---------|
| United States Rubber Co. | 186,800 | 42,200 | 71,300 | 64,900= | 365,200 |
| Poel & Arnold..... | 147,800 | 45,100 | 108,900 | 19,200= | 321,000 |
| New York Commercial Co. | 99,000 | 17,900 | 54,000 | 2,900= | 173,800 |
| A. T. Morse & Co..... | 30,800 | 7,700 | 47,300 | 22,700= | 108,500 |
| William Wright & Co..... | 36,700 | 3,500 | 56,100 |= | 96,300 |
| Charles Ahrenfeldt & Son | ..... | ..... | ..... | 64,400= | 64,400 |
| Lawrence Johnson & Co. | 28,900 | 7,500 | 2,400 |= | 38,800 |
| G. Amsinck & Co..... | 5,700 | 400 | 6,700 | 20,600= | 33,400 |
| Thomsen & Co..... | 4,100 | 200 | 7,700 |= | 9,000 |
| Lionel Hagenaers & Co.. | 4,100 | ..... | 2,200 |= | 6,300 |

Total..... 540,900 124,500 356,600 194,700=1,216,700

April 25.—By the steamer *Hubert*, from Manáos and Pará:

| | | | | | |
|--------------------------|---------|--------|---------|----------|---------|
| United States Rubber Co. | 99,700 | 25,900 | 48,700 | 61,900= | 236,200 |
| Poel & Arnold..... | 45,300 | 12,400 | 46,700 | 46,700= | 151,100 |
| William Wright & Co..... | 36,900 | 9,400 | 19,600 | 4,700= | 70,600 |
| A. T. Morse & Co..... | 11,000 | 2,000 | 39,800 | 500= | 53,300 |
| New York Commercial Co. | 9,700 | 2,400 | 8,700 |= | 20,800 |
| Hagemeyer & Brunn..... | 9,800 | 2,800 | 6,300 |= | 18,900 |
| Lionel Hagenaers & Co.. | 4,000 | ..... | 1,800 |= | 5,800 |
| G. Amsinck & Co..... | 8,200 | 3,500 | 8,700 | 1,700= | 22,100 |
| Total..... | 224,600 | 58,400 | 180,300 | 115,500= | 578,800 |

[NOTE.—The steamer *Polyarp*, from Pará, is due at New York on May 5, with 280 tons Rubber and 50 tons Caucho.]

APR. 2.—By the *Bolivia*=Costa Rica, etc.:

| | | |
|----------------------------|-------|-------|
| Graham Hinkley & Co..... | 1,800 | ..... |
| Kunhardt & Co..... | 1,000 | ..... |
| Isaac Brandon & Bros..... | 500 | ..... |
| Silva, Bussellus & Co..... | 500 | ..... |
| Charles E. Griffin..... | 200 | 4,000 |

APR. 4.—By the *Theopsis*=Bahia:

| | | |
|----------------------------|--------|--------|
| J. H. Rossbach & Bros..... | 19,500 | ..... |
| Hirsch & Kaiser..... | 10,000 | ..... |
| Eggers & Heinlein..... | 5,700 | ..... |
| A. D. Hitch & Co..... | 3,200 | 38,500 |

APR. 5.—By the *Atene*=Cartagena:

| | | |
|--------------------------|-------|-------|
| Sperling & Williams..... | 3,500 | ..... |
| Isaac Kubie & Co..... | 1,500 | ..... |
| American Trading Co..... | 1,200 | 6,200 |

APR. 5.—By the *Santiago*=Mexico:

| | | |
|---------------------------|--------|-------|
| George A. Alden & Co..... | 12,000 | |
|---------------------------|--------|-------|

APR. 6.—By the *City of Washington*=Colon:

| | | |
|---------------------------|-------|--------|
| Hirzel, Feltman & Co..... | 7,600 | ..... |
| G. Amsinck & Co..... | 3,100 | ..... |
| Meyer Hecht..... | 7,900 | ..... |
| Fidanque Bros. & Co..... | 2,800 | ..... |
| Piza Nephews & Co..... | 1,600 | ..... |
| W. Louisa & Co..... | 1,100 | ..... |
| Silva Bussellus & Co..... | 400 | ..... |
| Eggers & Heinlein..... | 400 | ..... |
| Isaac Brandon & Bros..... | 400 | ..... |
| Fred Peterson & Co..... | 800 | ..... |
| Mecke & Co..... | 200 | ..... |
| D. A. De Lima & Co..... | 200 | ..... |
| Suzarte & Whitney..... | 100 | 26,600 |

APR. 6.—By the *El Dia*=Galveston:

| | | |
|------------------------|-------|-------|
| Fred. Probst & Co..... | 4,600 | |
|------------------------|-------|-------|

APR. 11.—By the *Proteus*=New Orleans:

| | | |
|--------------------------|-------|-------|
| A. T. Morse & Co..... | 4,500 | ..... |
| G. Amsinck & Co..... | 1,500 | ..... |
| Rosenthal Sons & Co..... | 1,000 | ..... |
| K. Mandell & Co..... | 300 | 7,300 |

APR. 12.—By the *Alleghany*=Greytown:

| | | |
|---------------------------|-------|--------|
| A. D. Straus & Co..... | 2,500 | ..... |
| E. B. Strout..... | 2,500 | ..... |
| Isaac Brandon & Bros..... | 700 | ..... |
| A. Held..... | 4,400 | ..... |
| Isaac Kubie & Co..... | 1,500 | 11,700 |

APR. 12.—By the *Seguranea*=Colon:

| | | |
|--------------------------------|-------|--------|
| Roldan & Van Sickle..... | 6,000 | ..... |
| E. B. Strout..... | 4,200 | ..... |
| Meyer Hecht..... | 2,700 | ..... |
| Livingstone & Co..... | 2,300 | ..... |
| Hirzel, Feltman & Co..... | 1,700 | ..... |
| Isaac Brandon & Bros..... | 1,400 | ..... |
| Alberto Dumarest..... | 2,800 | ..... |
| G. Amsinck & Co..... | 1,200 | ..... |
| A. Santos & Co..... | 1,000 | ..... |
| Andreas & Co..... | 1,000 | ..... |
| L. Johnson & Co..... | 800 | ..... |
| Smithers, Nordenholt & Co..... | 800 | 26,000 |

APR. 13.—By the *Manzanillo*=Mexico:

| | | |
|---------------------------|--------|--------|
| George A. Alden & Co..... | 22,000 | ..... |
| H. Marquardt & Co..... | 3,000 | ..... |
| Samuels & Cummings..... | 2,500 | ..... |
| L. N. Chemedin & Co..... | 1,000 | ..... |
| Graham, Hinkley & Co..... | 700 | ..... |
| American Trading Co..... | 200 | 29,400 |

APR. 13.—By the *Brandenburg*=Bremen:

| | | |
|------------------------|-------|-------|
| Eggers & Heinlein..... | 4,000 | |
|------------------------|-------|-------|

APR. 18.—By the *Pretoria*=Hamburg:

| | | |
|--------------------|-------|-------|
| Poel & Arnold..... | 6,000 | |
|--------------------|-------|-------|

APR. 18.—By the *Tumuri*=Mexico:

| | | |
|---------------------------|-------|-------|
| George A. Alden & Co..... | 3,000 | ..... |
| H. Marquardt & Co..... | 500 | ..... |
| E. N. Tibbals & Co..... | 200 | ..... |
| E. Steiger & Co..... | 300 | 4,000 |

APR. 19.—By the *Siberia*=Cartagena:

| | | |
|-------------------------------|-------|-------|
| Isaac Brandon & Bros..... | 1,300 | ..... |
| Kunhardt & Co..... | 1,100 | ..... |
| American Trading Co..... | 1,000 | ..... |
| Guiterman Rosenfeld & Co..... | 1,100 | ..... |
| G. Amsinck & Co..... | 800 | ..... |
| D. A. De Lima & Co..... | 300 | ..... |
| Cadenas & Coe..... | 500 | ..... |
| A. D. Straus & Co..... | 500 | ..... |
| A. N. Rotholz..... | 200 | 6,600 |

APR. 20.—By the *Alliance*=Colon:

| | | |
|----------------------------|-------|--------|
| Hirzel, Feltman & Co..... | 7,800 | ..... |
| Lawrence Johnson & Co..... | 2,300 | ..... |
| A. Rosenthal & Sons..... | 3,000 | ..... |
| D. N. Carrington & Co..... | 1,400 | ..... |
| Meyer Hecht..... | 1,200 | ..... |
| Roldan & Van Sickle..... | 1,200 | ..... |
| D. A. De Lima & Co..... | 1,000 | ..... |
| Kunhardt & Co..... | 400 | ..... |
| Pomares & Cushman..... | 300 | ..... |
| Eggers & Heinlein..... | 500 | 19,000 |

APR. 20.—By the *Byron*=Bahia:

| | | |
|----------------------------|--------|--------|
| J. H. Rossbach & Bros..... | 40,000 | ..... |
| Hirsch & Kaiser..... | 30,000 | ..... |
| A. D. Hitch & Co..... | 14,000 | 84,000 |

APR. 21.—By the *El Siglo*=New Orleans:

| | | |
|-------------------------------|--------|--------|
| A. T. Morse & Co..... | 10,000 | ..... |
| A. N. Rotholz..... | 5,000 | ..... |
| Manhattan Rubber Mfg. Co..... | 4,500 | 19,500 |

AFRICANS.

| | | POUNDS. |
|---|--------|---------|
| MAR. 28.—By the <i>Etruria</i> =Liverpool: | | |
| United States Rubber Co..... | ..... | 18,000 |
| MAR. 28.—By the <i>Pennsylvania</i> =Hamburg: | | |
| A. T. Morse & Co..... | 27,000 | ..... |
| Poel & Arnold..... | 15,000 | 42,000 |
| MAR. 30.—By the <i>Oceanic</i> =Liverpool: | | |
| George A. Alden & Co..... | 45,000 | ..... |
| Poel & Arnold..... | 42,000 | ..... |
| United States Rubber Co..... | 38,000 | ..... |
| A. T. Morse & Co..... | 11,000 | ..... |
| William Wright & Co..... | 6,000 | 142,000 |
| MAR. 30.—By the <i>Finland</i> =Antwerp: | | |
| Poel & Arnold..... | 11,000 | ..... |
| A. T. Morse & Co..... | 7,000 | 18,000 |
| APR. 1.—By the <i>Potdam</i> =Rotterdam: | | |
| Poel & Arnold..... | ..... | 12,000 |
| APR. 2.—By the <i>Patricia</i> =Hamburg: | | |
| A. T. Morse & Co..... | 38,000 | ..... |
| George A. Alden & Co..... | 35,000 | ..... |
| Joseph Cantor..... | 11,000 | 84,000 |

AFRICANS—Continued

| | |
|---|----------------|
| APR. 4.—By the <i>Tenedos</i> =Lisbon: | |
| Poel & Arnold..... | 57,000 |
| APR. 5.—By the <i>Vaderland</i> =Antwerp: | |
| George A. Alden & Co..... | 290,000 |
| Robinson & Tallman..... | 18,000 |
| Poel & Arnold..... | 10,093 318,000 |
| APR. 6.—By the <i>Georgic</i> =Liverpool: | |
| Poel & Arnold..... | 34,000 |
| United States Rubber Co..... | 13,500 47,500 |
| APR. 7.—By the <i>Teutonic</i> =Liverpool: | |
| United States Rubber Co..... | 72,000 |
| A. T. Morse & Co..... | 40,000 |
| Poel & Arnold..... | 29,000 |
| George A. Alden & Co..... | 26,000 |
| William Wright & Co..... | 4,500 171,500 |
| APR. 11.—By the <i>Celtic</i> =Liverpool: | |
| United States Rubber Co..... | 68,000 |
| A. T. Morse & Co..... | 24,000 92,000 |
| APR. 11.—By the <i>Belgravia</i> =Hamburg: | |
| A. T. Morse & Co..... | 27,000 |
| George A. Alden & Co..... | 11,500 38,500 |
| APR. 11.—By the <i>St. Paul</i> =London: | |
| Poel & Arnold..... | 3,500 |
| Henry A. Gould Co..... | 2,000 5,500 |
| APR. 12.—By the <i>Kroonland</i> =Antwerp: | |
| Poel & Arnold..... | 22,000 |
| APR. 14.—By the <i>Ryndam</i> =Rotterdam: | |
| Poel & Arnold..... | 56,000 |
| APR. 15.—By the <i>Cedric</i> =Liverpool: | |
| George A. Alden & Co..... | 11,000 |
| Poel & Arnold..... | 6,000 |
| Joseph Cantor..... | 9,000 26,000 |
| APR. 16.—By the <i>Campania</i> =Liverpool: | |
| United States Rubber Co..... | 27,000 |
| A. T. Morse & Co..... | 13,000 |
| Poel & Arnold..... | 11,500 51,000 |
| APR. 19.—By the <i>Peninsular</i> =Lisbon: | |
| United States Rubber Co..... | 67,000 |

AFRICANS—Continued.

| | |
|---|--------------|
| APR. 21.—By the <i>Majestic</i> =Liverpool: | |
| United States Rubber Co..... | 25,000 |
| Poel & Arnold..... | 56,000 |
| Henry A. Gould Co..... | 2,500 |
| Rubber Trading Co..... | 3,500 97,000 |

EAST INDIAN.

| | |
|--|--------------|
| APR. 4.—By the <i>Hudson</i> =Singapore: | |
| William Wright & Co..... | 34,000 |
| Poel & Arnold..... | 24,000 |
| Pierre J. Betts..... | 11,000 |
| Robert Brans & Co..... | 18,000 |
| D. A. Shaw & Co..... | 9,500 96,500 |

APR. 20.—By the *Wartensle*=Calcutta:

| | |
|-------------------------|-------|
| Mohl, Schutte & Co..... | 3,500 |
|-------------------------|-------|

PONTIANAK.

| | |
|--|----------------|
| APR. 4.—By the <i>Hudson</i> =Singapore: | |
| William Wright & Co..... | 525,000 |
| Poel & Arnold..... | 140,000 |
| Rubber Trading Co..... | 45,000 |
| Robert Brans & Co..... | 20,000 |
| D. A. Shaw & Co..... | 85,000 815,000 |

GUTTA-PERCHA AND BALATA.

| | |
|--|-------|
| MAR. 31.—By the <i>Oceanic</i> =Liverpool: | |
| Earle Brothers..... | 5,000 |

APR. 2.—By the *Lucania*=Liverpool:

| | |
|---------------------|-------|
| Earle Brothers..... | 3,500 |
|---------------------|-------|

APR. 11.—By the *Belgravia*=Hamburg:

| | |
|---------------------------------|--------------|
| To order..... | 15,000 |
| Kempshall Manufacturing Co..... | 1,500 16,500 |

BALATA.

MAR. 28.—By the *St. Louis*=London:

| | |
|------------------------|-------|
| Henry A. Gould Co..... | 7,000 |
|------------------------|-------|

MAR. 28.—By the *Maraca*=Trinidad:

| | |
|---------------------------|-------|
| George A. Alden & Co..... | 3,000 |
|---------------------------|-------|

APR. 11.—By the *St. Paul*=London:

| | |
|---------------------------|-------------|
| Henry A. Gould..... | 2,500 |
| George A. Alden & Co..... | 1,500 4,000 |

APR. 22.—By the *Grenada*=Trinidad:

| | |
|---------------------------|--------------|
| George A. Alden & Co..... | 11,000 |
| Eggers & Heinlein..... | 1,500 12,500 |

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MARCH.

| Imports: | POUNDS. | VALUE. |
|---------------------------------|------------|-------------|
| India-rubber..... | 8,920,932 | \$6,266,096 |
| Gutta-percha..... | 30,128 | 18,596 |
| Gutta-jelutong (Pontianak)..... | 1,420,700 | 47,333 |
| Total..... | 10,371,820 | \$6,332,214 |
| Exports: | | |
| India-rubber..... | 96,884 | \$ 72,513 |
| Reclaimed rubber..... | 29,101 | 3,958 |
| Rubber Scrap Imported..... | 1,554,429 | \$ 96,763 |

BOSTON ARRIVALS.

| | POUNDS |
|---|---------|
| MAR. 3.—By the <i>Bengalia</i> =Hamburg: | |
| George A. Alden & Co.—African..... | 95,944 |
| MAR. 7.—By the <i>Sachem</i> =Liverpool: | |
| Poel & Arnold—African..... | 5,200 |
| MAR. 9.—By the <i>Cestrian</i> =Liverpool: | |
| Poel & Arnold—African..... | 13,540 |
| MAR. 21.—By the <i>Boesia</i> =Hamburg: | |
| George A. Alden & Co.—African..... | 4,850 |
| MAR. 22.—By the <i>Michigan</i> =Liverpool: | |
| Poel & Arnold—African..... | 18,413 |
| MAR. 23.—By the <i>Cakmore</i> =Antwerp: | |
| Poel & Arnold—African..... | 14,310 |
| MAR. 31.—By the <i>Bohemian</i> =Liverpool: | |
| Poel & Arnold—African..... | 14,943 |
| Total..... | 167,200 |
| [Value, \$89,603.] | |

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

| UNITED STATES. | | | | GREAT BRITAIN. | | | |
|-----------------------|------------|-----------|--------------|-----------------------|------------|-----------|--------------|
| MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. | MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. |
| February, 1904..... | 9,159,478 | 237,848 | 8,921,630 | February, 1904..... | 5,438,048 | 3,612,448 | 1,825,600 |
| January..... | 4,982,409 | 235,498 | 4,746,911 | January..... | 4,628,064 | 3,225,046 | 1,403,018 |
| Two months, 1904..... | 14,141,887 | 473,346 | 13,668,541 | Two months, 1904..... | 10,066,112 | 6,837,494 | 3,228,618 |
| Two months, 1903..... | 10,727,780 | 511,395 | 10,216,385 | Two months, 1903..... | 9,644,696 | 6,760,544 | 2,883,552 |
| Two months, 1902..... | 9,621,307 | 492,495 | 9,128,812 | Two months, 1902..... | 11,242,448 | 5,225,248 | 6,017,200 |
| GERMANY. | | | | ITALY. | | | |
| MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. | MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. |
| February, 1904..... | 3,312,320 | 1,337,380 | 1,974,940 | February, 1904..... | | | |
| January..... | 2,834,500 | 696,300 | 2,138,200 | January..... | 101,640 | 550 | 100,980 |
| Two months, 1904..... | 6,146,820 | 2,033,680 | 4,113,140 | Two months, 1904..... | | | |
| Two months, 1903..... | 5,566,220 | 2,151,820 | 3,414,400 | Two months, 1903..... | 218,020 | 3,960 | 214,060 |
| Two months, 1902..... | 4,695,460 | 1,711,160 | 2,984,300 | Two months, 1902..... | 310,640 | 42,240 | 268,400 |
| FRANCE.* | | | | AUSTRIA-HUNGARY. | | | |
| MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. | MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. |
| February, 1904..... | 2,755,940 | 1,559,360 | 1,196,580 | February, 1904..... | 292,380 | 440 | 291,940 |
| January..... | 805,860 | 728,860 | 77,000 | January..... | 243,100 | 2,640 | 240,460 |
| Two months, 1904..... | 3,561,800 | 2,288,220 | 1,273,580 | Two months, 1904..... | 535,480 | 3,080 | 532,400 |
| Two months, 1903..... | 2,399,540 | 1,567,280 | 832,260 | Two months, 1903..... | 477,180 | 440 | 476,740 |
| Two months, 1902..... | 3,350,380 | 1,209,340 | 2,141,040 | Two months, 1902..... | 440,220 | 440 | 439,780 |
| BELGIUM.† | | | | | | | |
| MONTHS. | IMPORTS. | EXPORTS. | NET IMPORTS. | | | | |
| February, 1904..... | | | | | | | |
| January..... | 1,379,356 | 895,228 | 484,128 | | | | |
| Two months, 1904..... | | | | | | | |
| Two months, 1903..... | 2,137,722 | 1,800,542 | 337,180 | | | | |
| Two months, 1902..... | 3,501,795 | 1,467,730 | 2,034,065 | | | | |

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canada consumption.

*General Commerce.

†Special Commerce.

4.

500

5.

UR.

.098

.088

.833

.214

ND5

.944

.200

.540

.850

.413

.310

.943

.200

rs.

0

8

8

2

0

rs.

0

0

0

rs.

0

0

0

0

0

ce